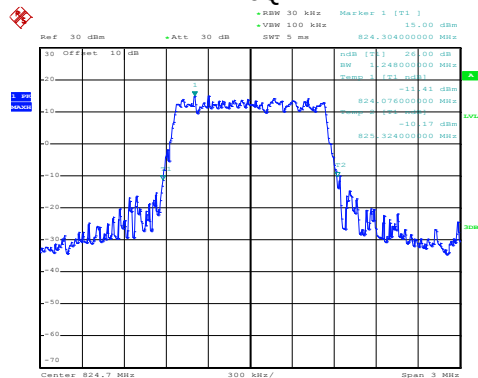


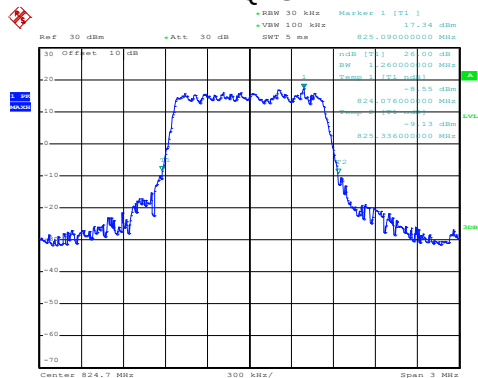
LTE Band 5: -26dBc bandwidth BW: 1.4MHz

16QAM



Date: 24.OCT.2019 14:32:03

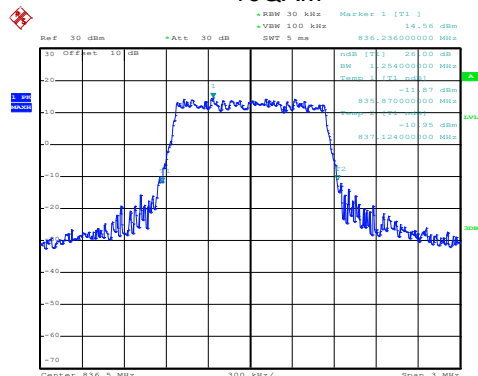
QPSK



Date: 24.OCT.2019 14:31:59

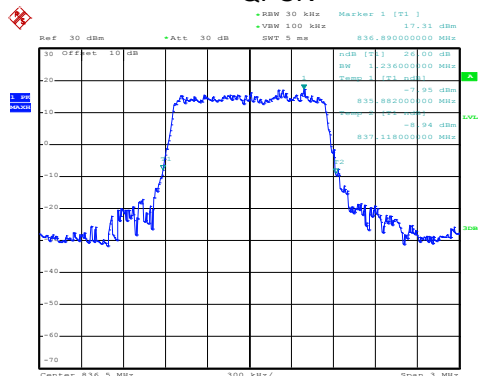
Lowest channel

16QAM



Date: 24.OCT.2019 14:32:17

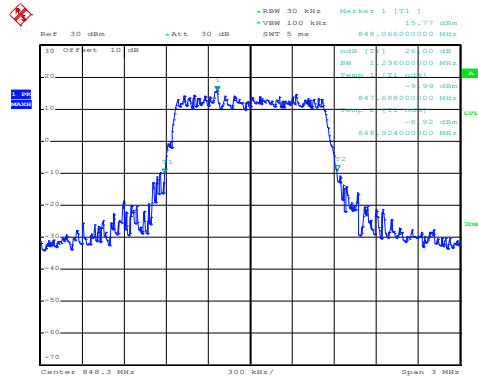
QPSK



Date: 24.OCT.2019 14:32:13

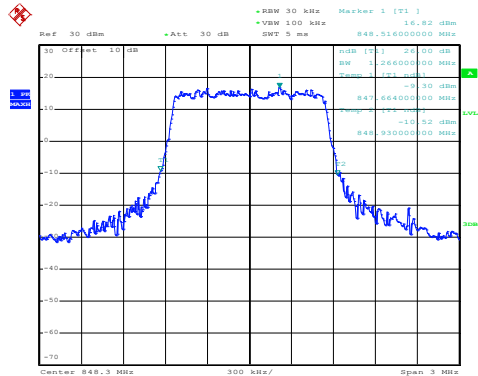
Middle channel

16QAM



Date: 24.OCT.2019 14:32:58

QPSK

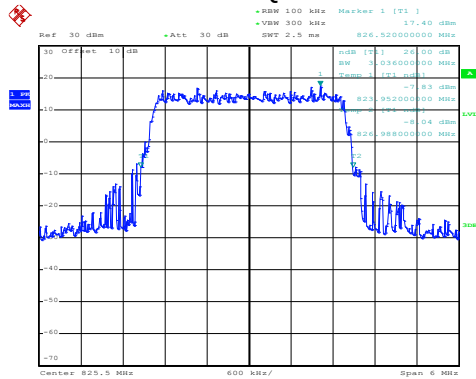


Date: 24.OCT.2019 14:32:54

Highest channel

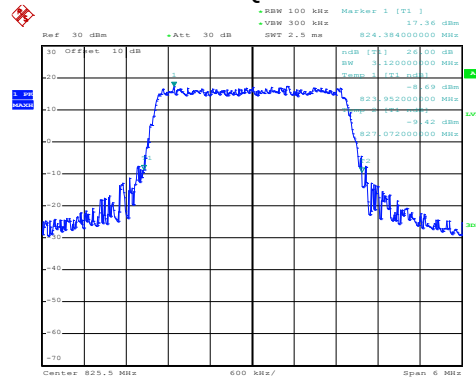
LTE Band 5: -26dBc bandwidth
BW: 3MHz

16QAM



Date: 24.OCT.2019 14:33:28

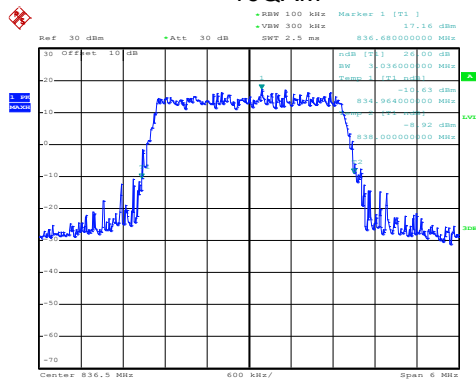
QPSK



Date: 24.OCT.2019 14:33:24

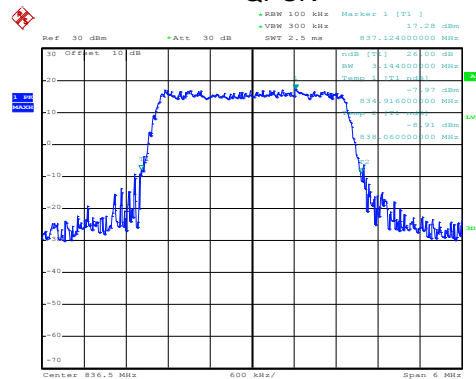
Lowest channel

16QAM



Date: 24.OCT.2019 14:34:03

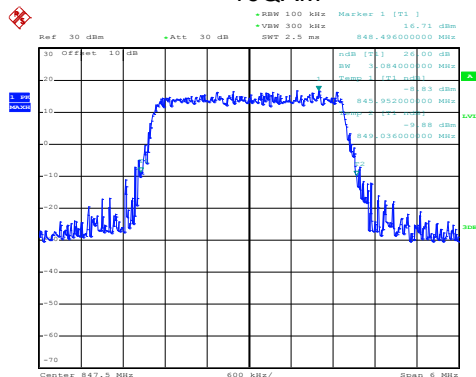
QPSK



Date: 24.OCT.2019 14:34:00

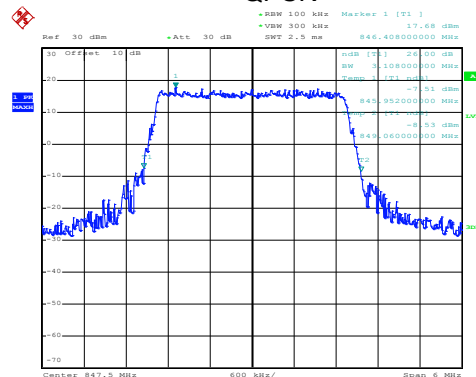
Middle channel

16QAM



Date: 24.OCT.2019 14:34:21

QPSK

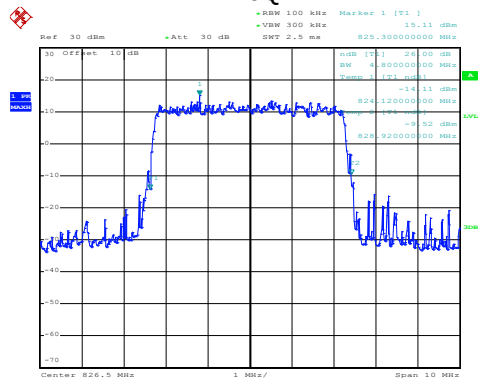


Date: 24.OCT.2019 14:34:18

Highest channel

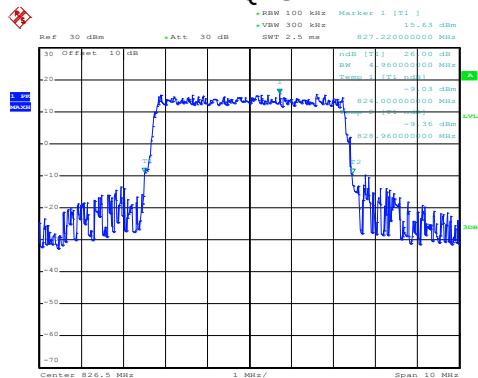
LTE Band 5: -26dBc bandwidth
BW: 5MHz

16QAM



Date: 24.OCT.2019 14:35:09

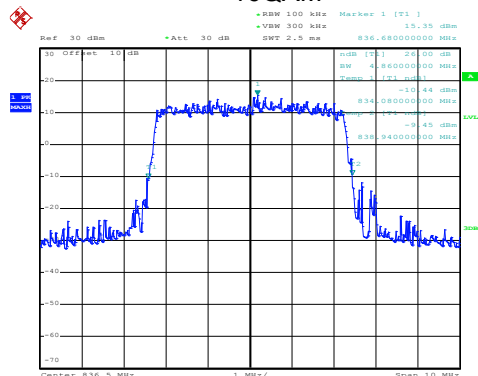
QPSK



Date: 24.OCT.2019 14:35:06

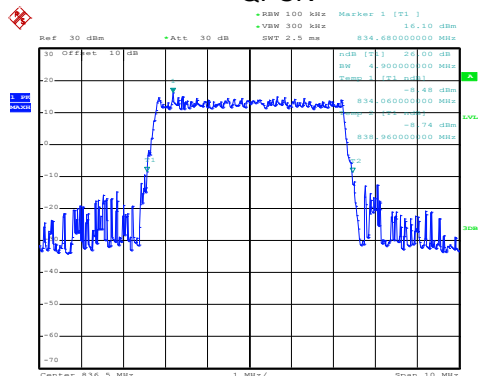
Lowest channel

16QAM



Date: 24.OCT.2019 14:35:21

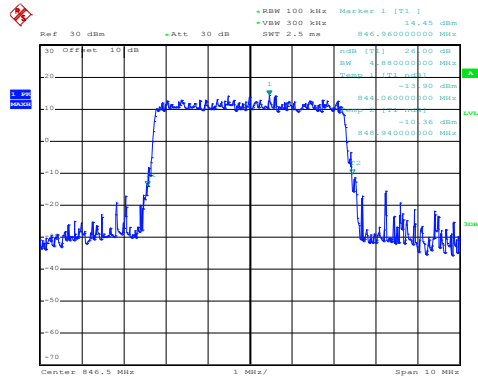
QPSK



Date: 24.OCT.2019 14:35:17

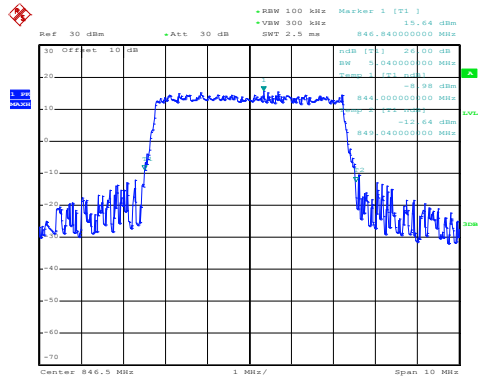
Middle channel

16QAM



Date: 24.OCT.2019 14:35:56

QPSK

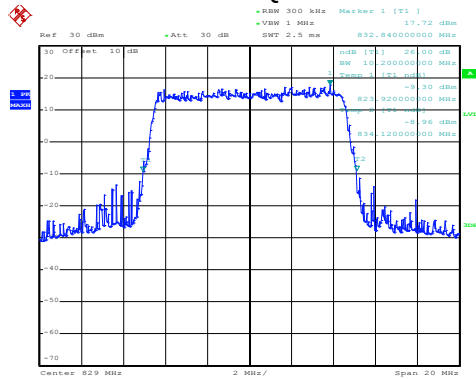


Date: 24.OCT.2019 14:35:52

Highest channel

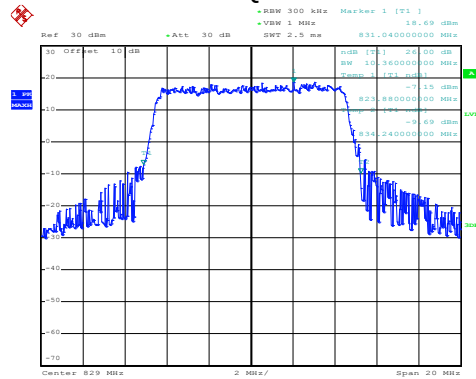
LTE Band 5: -26dBc bandwidth
BW: 10MHz

16QAM



Date: 24.OCT.2019 14:36:28

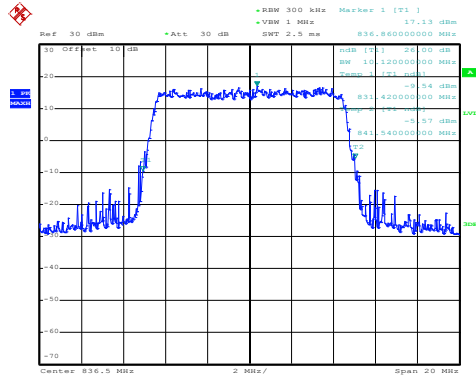
QPSK



Date: 24.OCT.2019 14:36:25

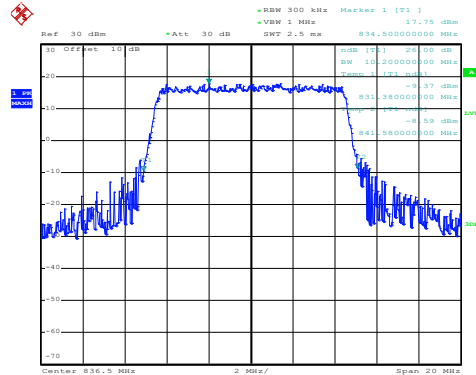
Lowest channel

16QAM



Date: 24.OCT.2019 14:37:04

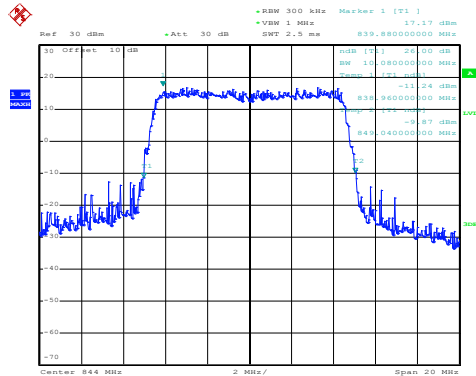
QPSK



Date: 24.OCT.2019 14:37:00

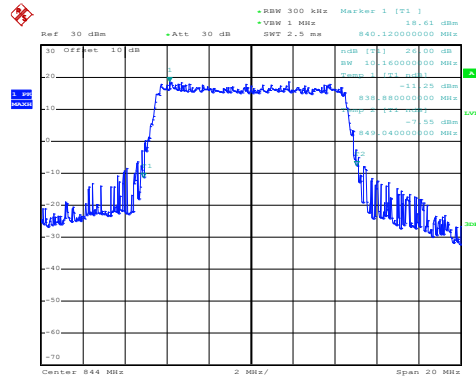
Middle channel

16QAM



Date: 24.OCT.2019 14:37:18

QPSK



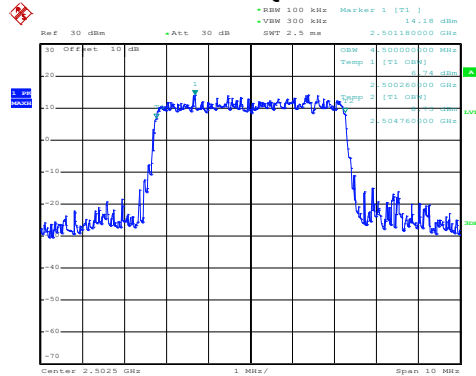
Date: 24.OCT.2019 14:37:15

Highest channel

LTE-Band 7 part:

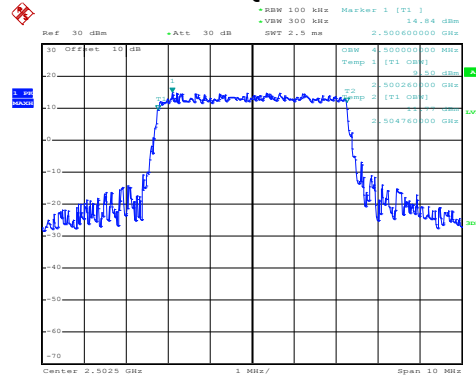
LTE Band 7: 99% Occupy bandwidth
BW: 5MHz

16QAM



Date: 24.OCT.2019 14:38:11

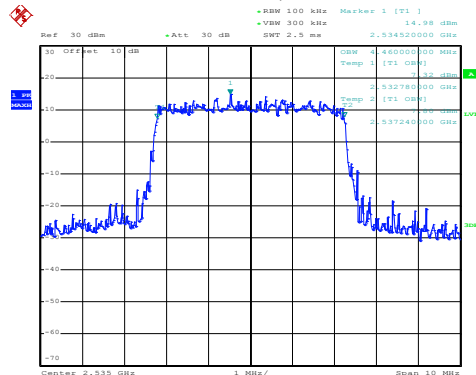
QPSK



Date: 24.OCT.2019 14:38:08

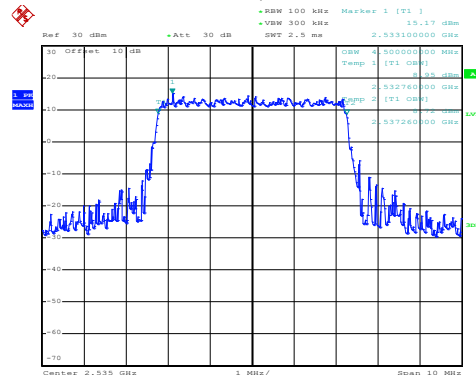
Lowest channel

16QAM



Date: 24.OCT.2019 14:38:48

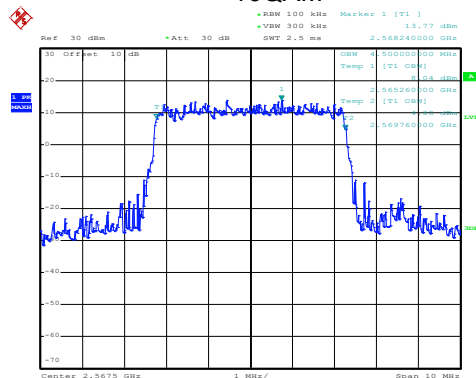
QPSK



Date: 24.OCT.2019 14:38:44

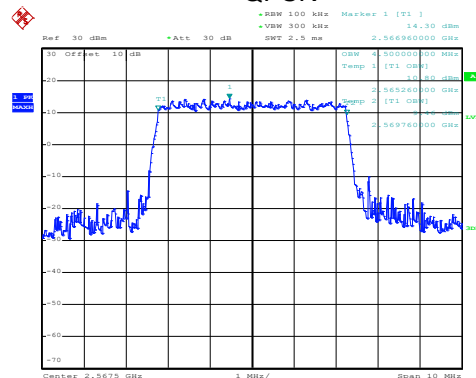
Middle channel

16QAM



Date: 24.OCT.2019 14:39:06

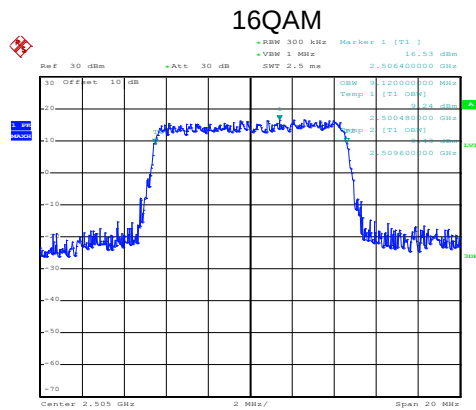
QPSK



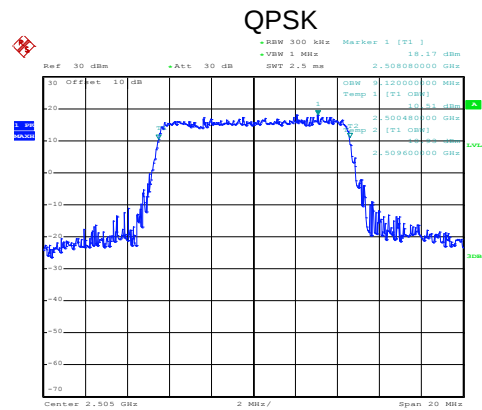
Date: 24.OCT.2019 14:39:02

Highest channel

LTE Band 7: 99% Occupy bandwidth
BW: 10MHz

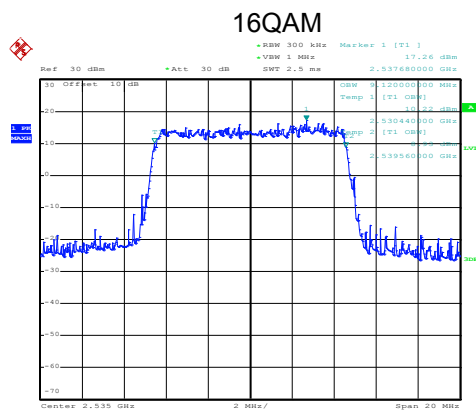


Date: 24.OCT.2019 14:40:00

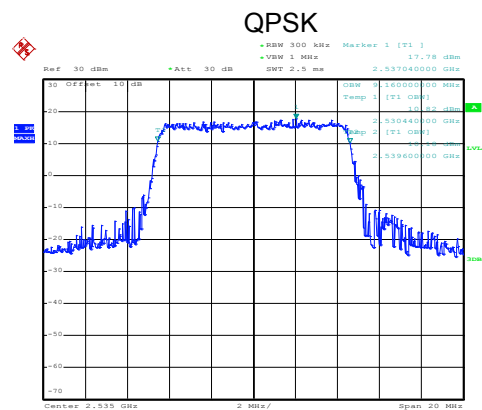


Date: 24.OCT.2019 14:39:56

Lowest channel

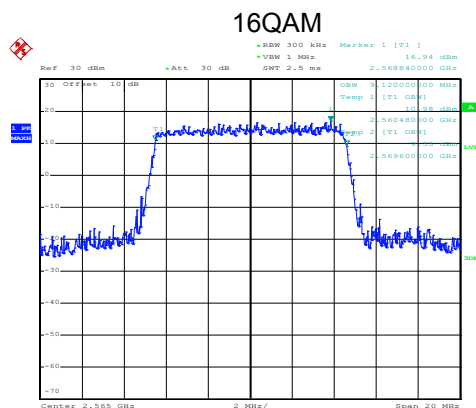


Date: 24.OCT.2019 14:40:15

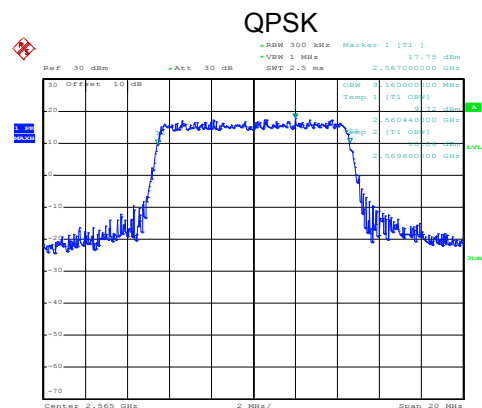


Date: 24.OCT.2019 14:40:11

Middle channel



Date: 24.OCT.2019 14:40:56

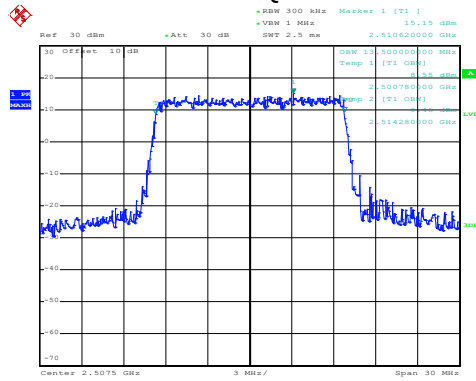


Date: 24.OCT.2019 14:40:52

Highest channel

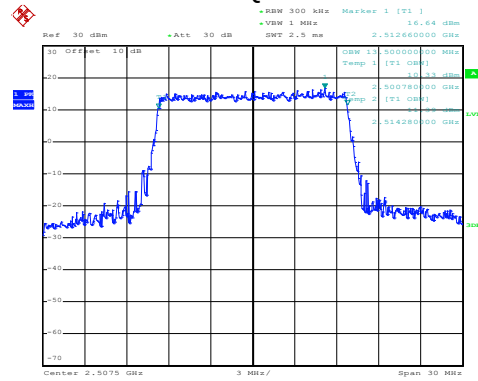
LTE Band 7: 99% Occupancy bandwidth
BW: 15MHz

16QAM



Date: 24.OCT.2019 14:41:29

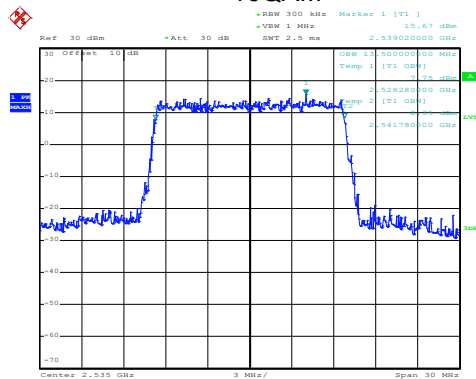
QPSK



Date: 24.OCT.2019 14:41:25

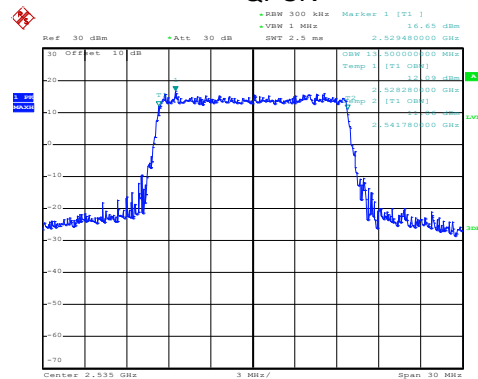
Lowest channel

16QAM



Date: 24.OCT.2019 14:42:08

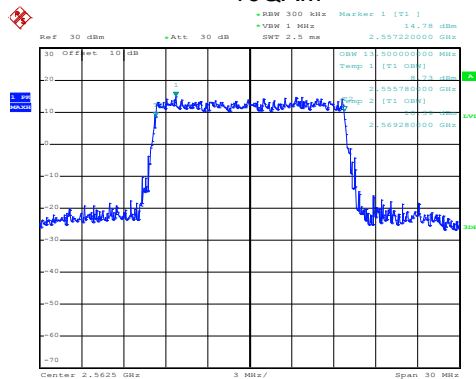
QPSK



Date: 24.OCT.2019 14:42:04

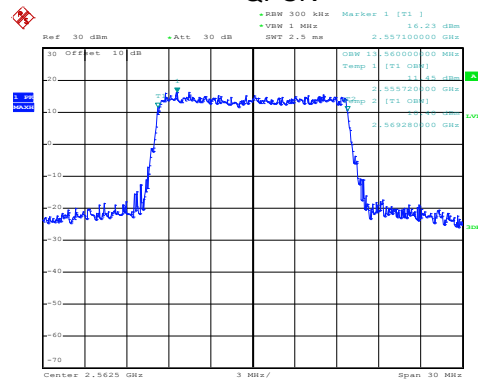
Middle channel

16QAM



Date: 24.OCT.2019 14:42:23

QPSK

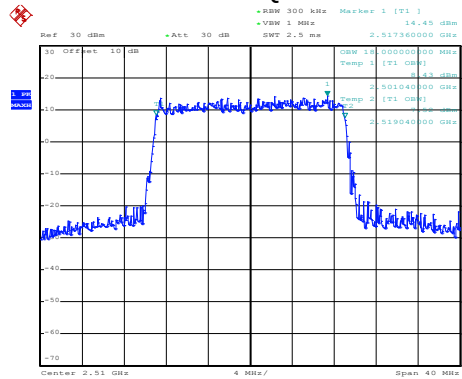


Date: 24.OCT.2019 14:42:19

Highest channel

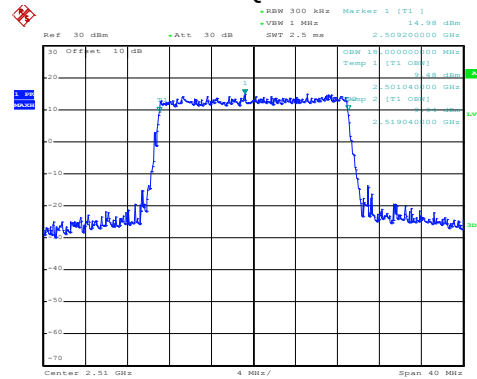
LTE Band 7: 99% Occupancy bandwidth
BW: 20MHz

16QAM



Date: 24.OCT.2019 14:43:18

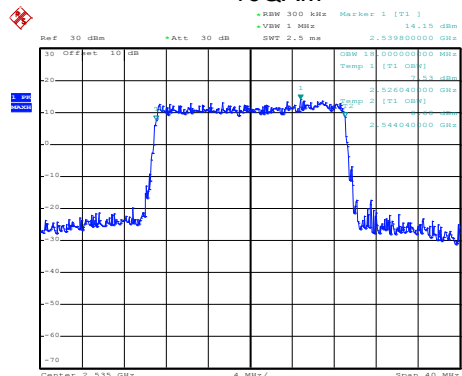
QPSK



Date: 24.OCT.2019 14:43:14

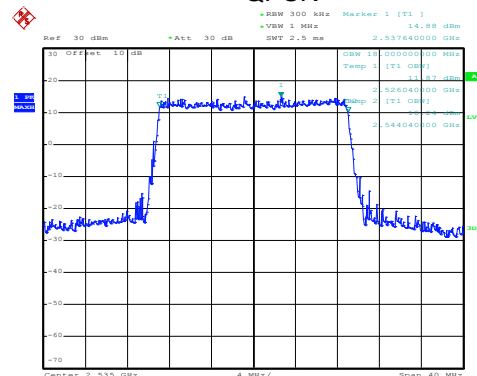
Lowest channel

16QAM



Date: 24.OCT.2019 14:43:31

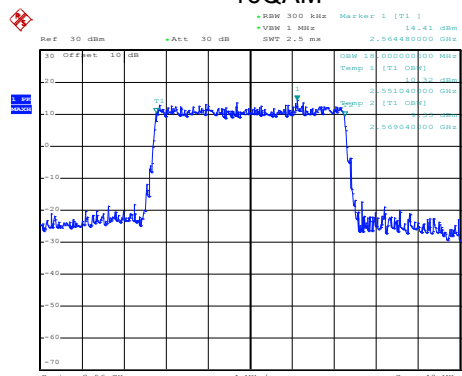
QPSK



Date: 24.OCT.2019 14:43:27

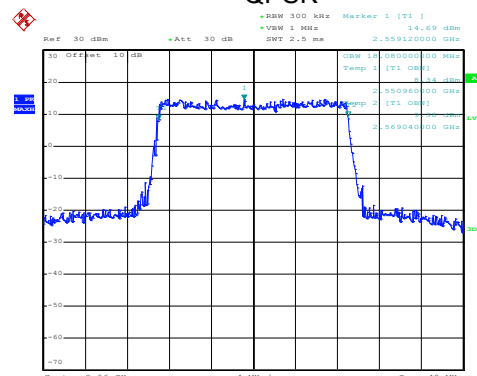
Middle channel

16QAM



Date: 24.OCT.2019 14:44:10

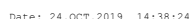
QPSK



Date: 24.OCT.2019 14:44:06

Highest channel

16QAM



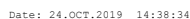
QPSK



16QAM



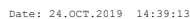
QPSK



16QAM



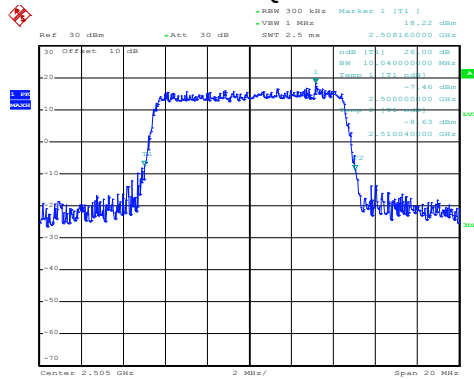
QPSK



Page 69 of

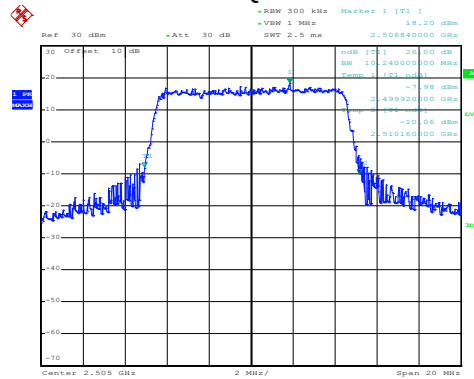
LTE Band 7: -26dBc bandwidth
BW: 10MHz

16QAM



Date: 24.OCT.2019 14:39:49

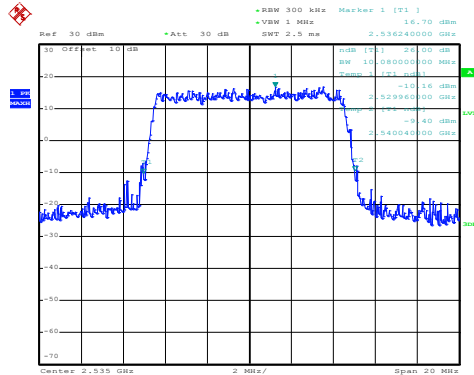
QPSK



Date: 24.OCT.2019 14:39:45

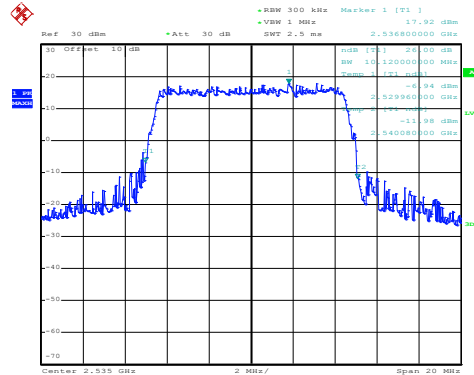
Lowest channel

16QAM



Date: 24.OCT.2019 14:40:26

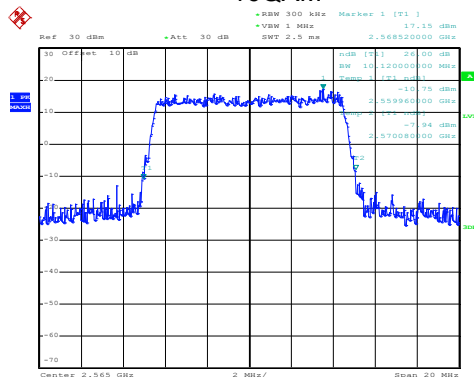
QPSK



Date: 24.OCT.2019 14:40:22

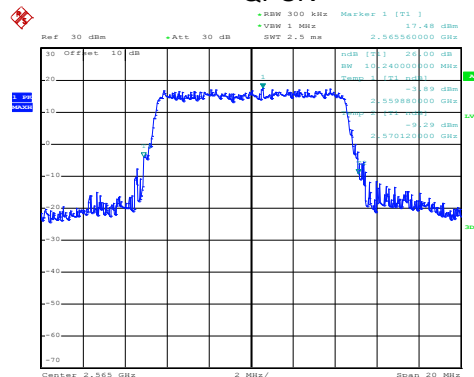
Middle channel

16QAM



Date: 24.OCT.2019 14:40:45

QPSK

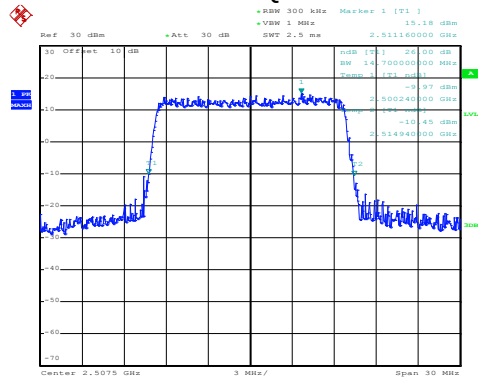


Date: 24.OCT.2019 14:40:41

Highest channel

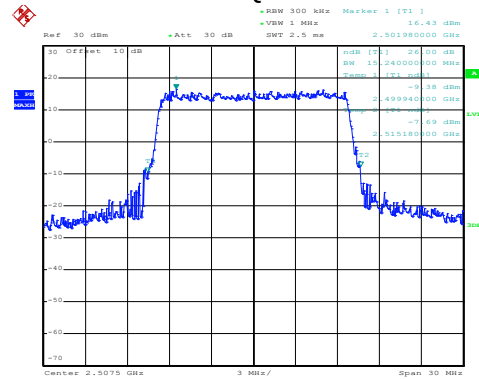
LTE Band 7: -26dBc bandwidth
BW: 15MHz

16QAM



Date: 24.OCT.2019 14:41:42

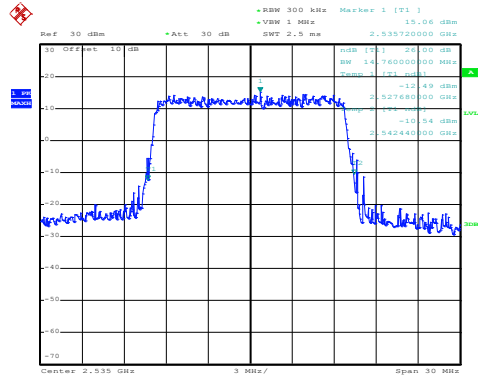
QPSK



Date: 24.OCT.2019 14:41:38

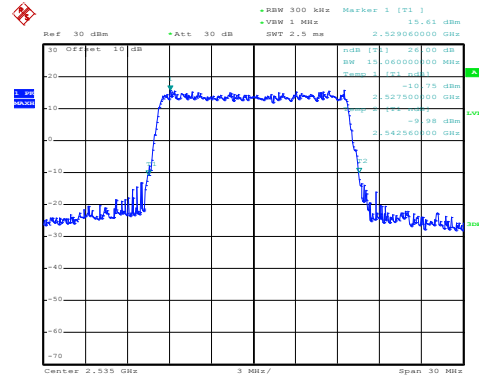
Lowest channel

16QAM



Date: 24.OCT.2019 14:41:57

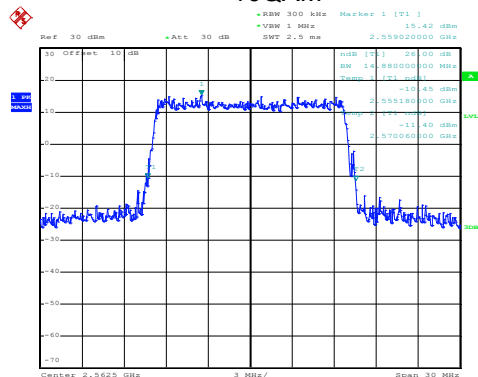
QPSK



Date: 24.OCT.2019 14:41:53

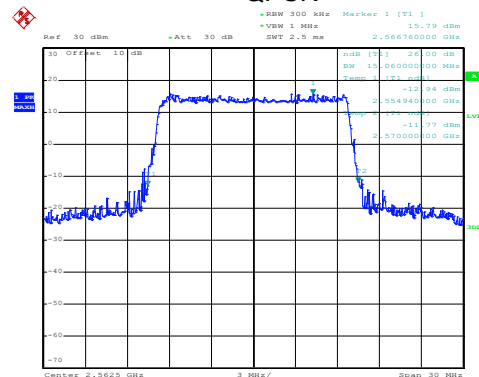
Middle channel

16QAM



Date: 24.OCT.2019 14:42:36

QPSK

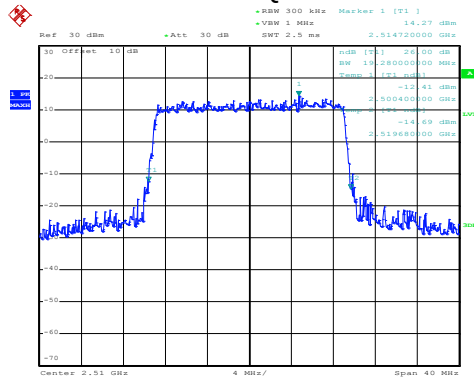


Date: 24.OCT.2019 14:42:31

Highest channel

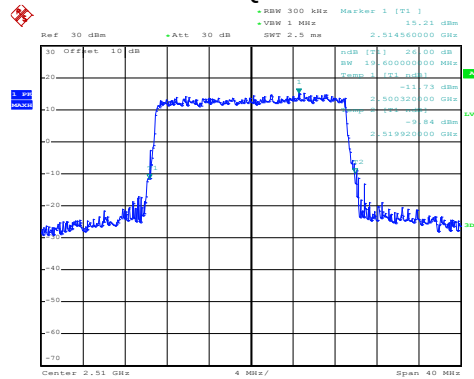
LTE Band 7: -26dBc bandwidth
BW: 20MHz

16QAM



Date: 24.OCT.2019 14:43:05

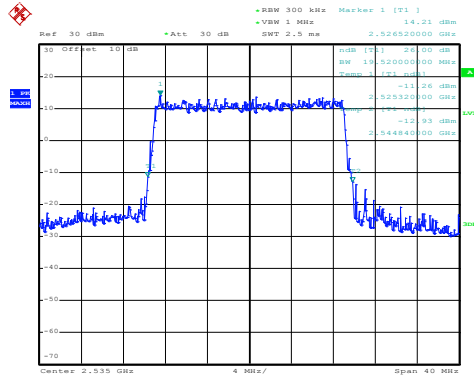
QPSK



Date: 24.OCT.2019 14:43:01

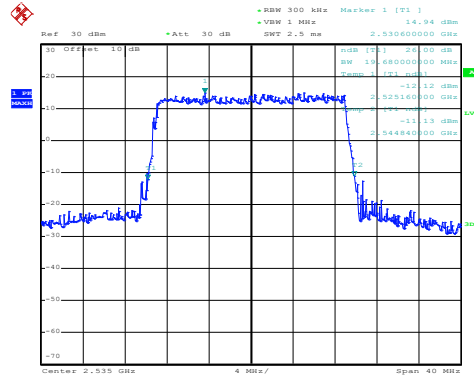
Lowest channel

16QAM



Date: 24.OCT.2019 14:43:43

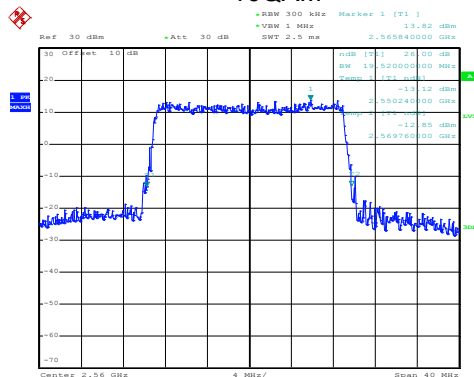
QPSK



Date: 24.OCT.2019 14:43:39

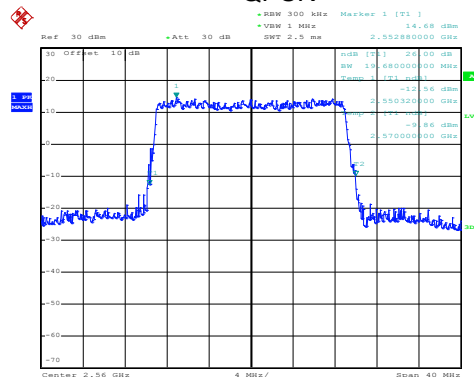
Middle channel

16QAM



Date: 24.OCT.2019 14:43:58

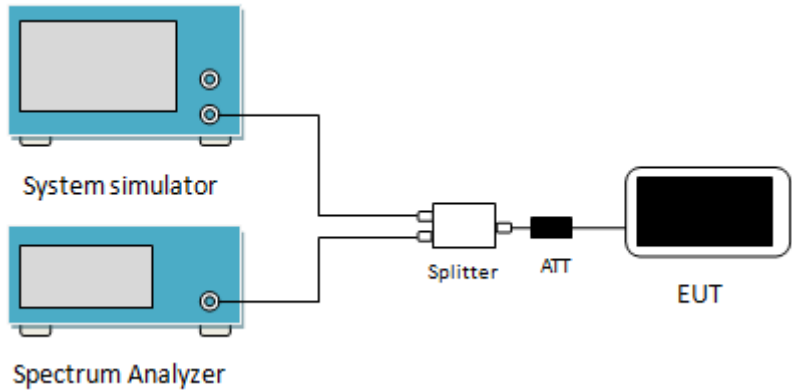
QPSK



Date: 24.OCT.2019 14:43:53

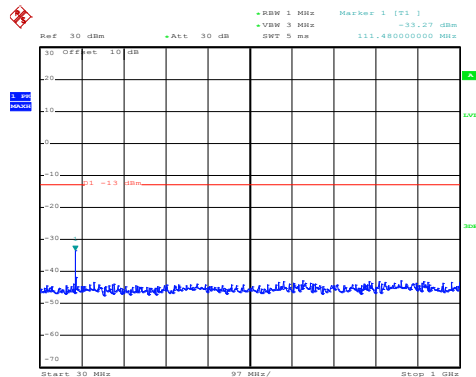
Highest channel

6.4 Out of band emission at antenna terminals

Test Requirement:	Part 22.917(b), Part 24.238 (a), part 27.53(h), Part 27.53(m)
Limit:	LTE Band 2 & 4 & 5 : The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB (-13 dBm). LTE Band 7: For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz.
Test Setup:	 The diagram shows a test setup. On the left, there are two blue rectangular boxes: the top one is labeled 'System simulator' and the bottom one is labeled 'Spectrum Analyzer'. Both have a single output port on their right side. These two ports are connected to a single input port of a white rectangular box labeled 'Splitter'. The 'Splitter' has two output ports on its right side. One output port is connected to a black rectangular box labeled 'ATT' (attenuator). The other output port is connected to a black rectangular box labeled 'EUT' (Equipment Under Test).
Test Procedure:	1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. 2 For the out of band: For Band 5 set the RBW=100 kHz, VBW=300 kHz when below 1 GHz, For Band 2/4/7 set the RBW=1 MHz, VBW=3 MHz when below 1 GHz RBW =1 MHz, VBW=3 MHz when above 1 GHz, Start=30MHz, Stop= 10th harmonic. 3 Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	Pre-scan all RB Size and offset, and found the RB Size and offset of worst case, so the report shows only the worst case test data.

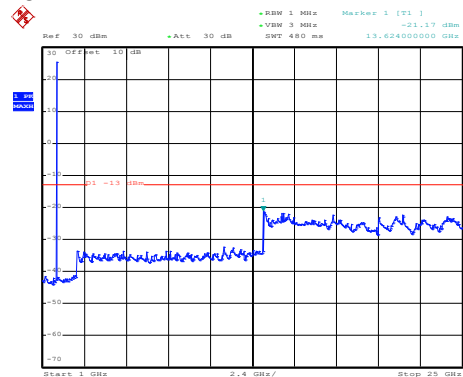
Test plots as follows (Conducted spurious emission) (worst case):
LTE Band 2 part:

LTE Band 2: 16 QAM & RB Size 1
BW: 1.4MHz
Lowest channel



Date: 24.OCT.2019 15:04:56

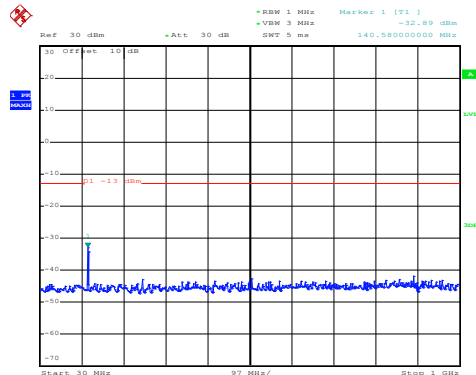
30MHz~1GHz



Date: 24.OCT.2019 15:01:48

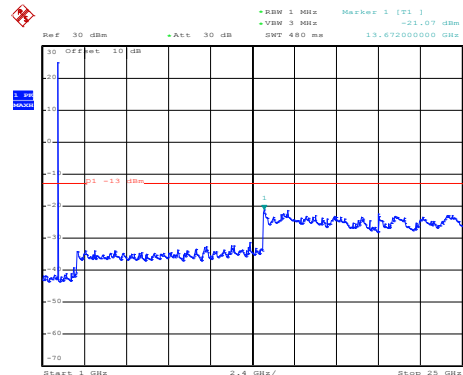
1GHz~25GHz

Middle channel



Date: 24.OCT.2019 15:04:42

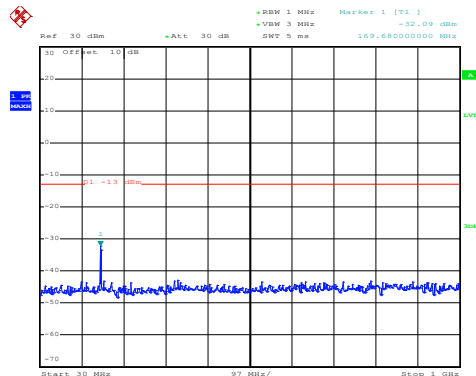
30MHz~1GHz



Date: 24.OCT.2019 15:02:05

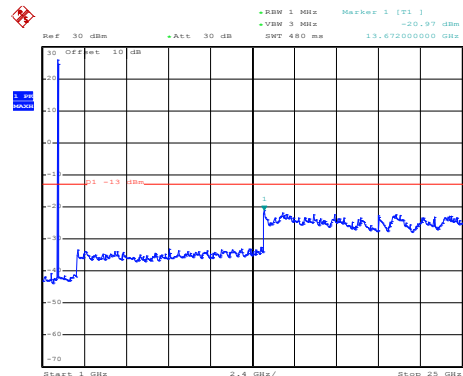
1GHz~25GHz

High channel



Date: 24.OCT.2019 15:04:29

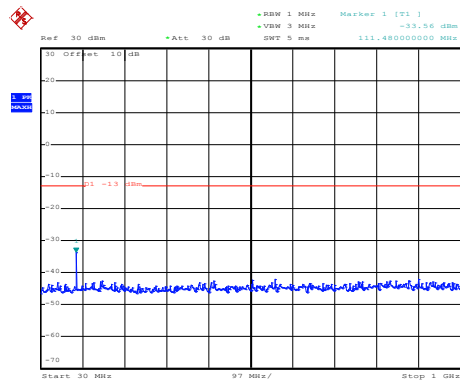
30MHz~1GHz



Date: 24.OCT.2019 15:02:24

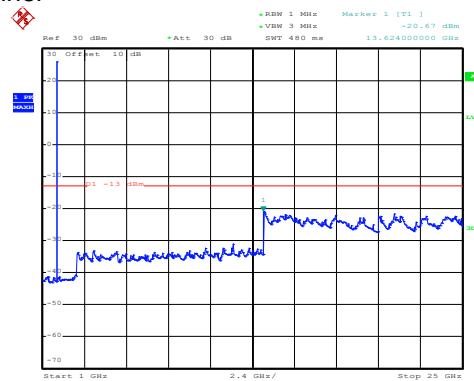
1GHz~25GHz

LTE Band 2: QPSK & RB Size 1
BW: 1.4MHz
Lowest channel



Date: 24.OCT.2019 15:04:52

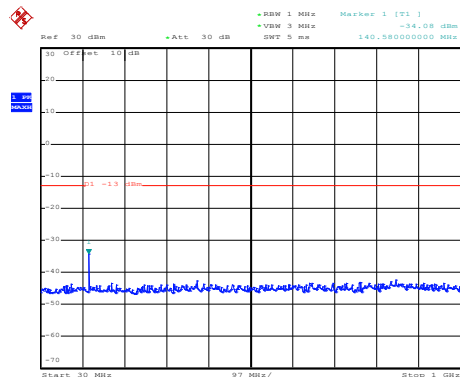
30MHz~1GHz



Date: 24.OCT.2019 15:01:43

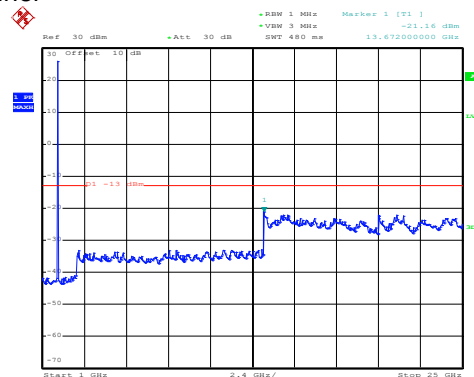
1GHz~25GHz

Middle channel



Date: 24.OCT.2019 15:04:38

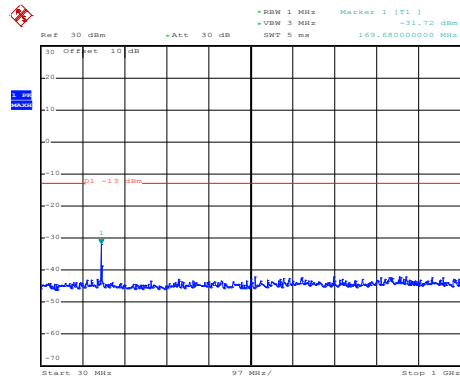
30MHz~1GHz



Date: 24.OCT.2019 15:01:58

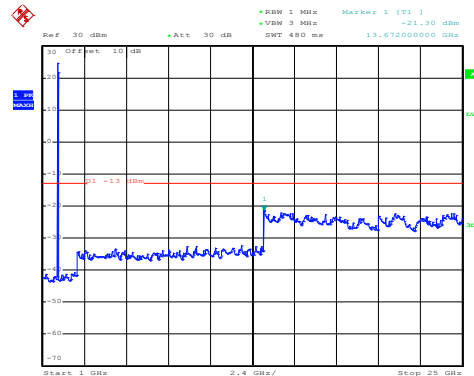
1GHz~25GHz

High channel



Date: 24.OCT.2019 15:04:26

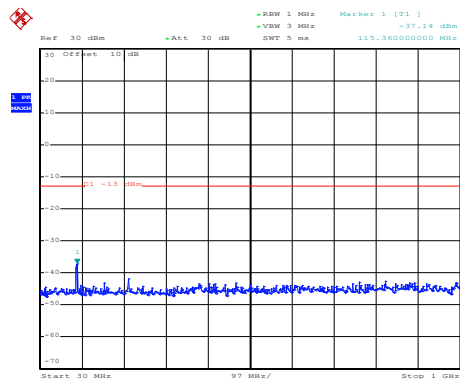
30MHz~1GHz



Date: 24.OCT.2019 15:02:17

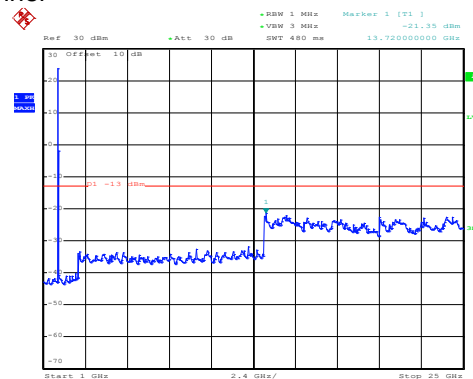
1GHz~25GHz

LTE Band 2: 16 QAM & RB Size 1
BW: 20MHz
Lowest channel



Date: 24.OCT.2019 15:03:47

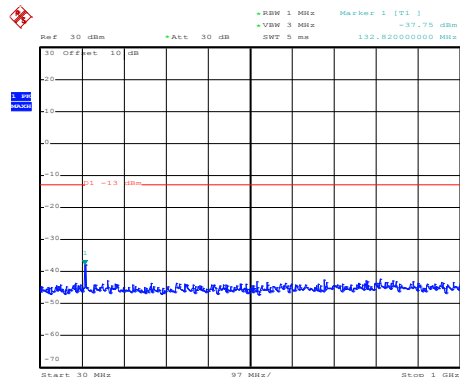
30MHz~1GHz



Date: 24.OCT.2019 15:03:28

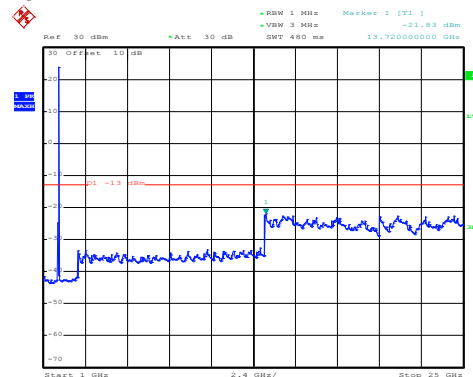
1GHz~25GHz

Middle channel



Date: 24.OCT.2019 15:03:57

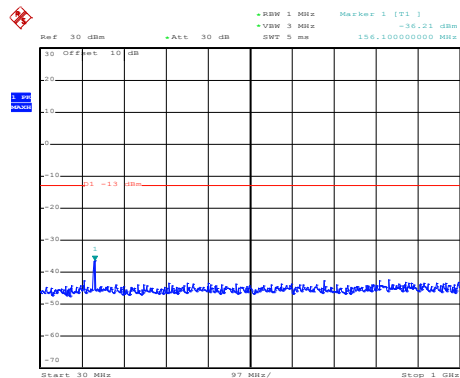
30MHz~1GHz



Date: 24.OCT.2019 15:03:09

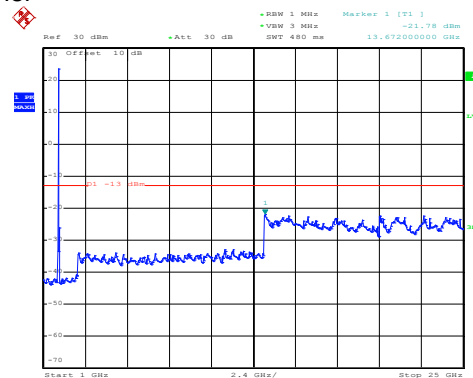
1GHz~25GHz

High channel



Date: 24.OCT.2019 15:04:10

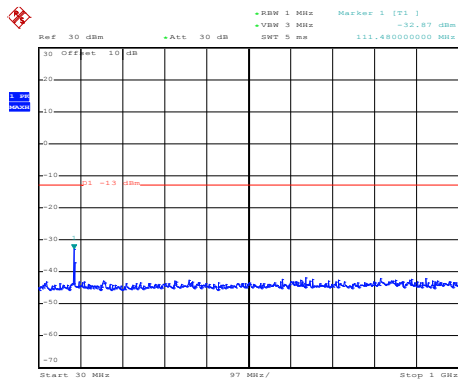
30MHz~1GHz



Date: 24.OCT.2019 15:02:53

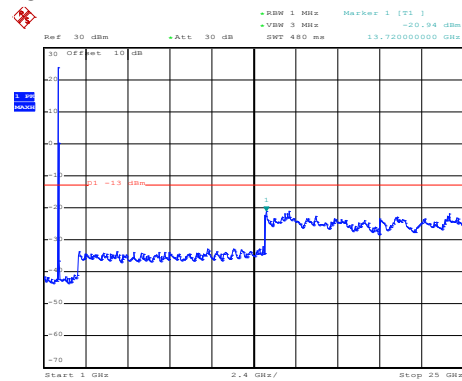
1GHz~25GHz

LTE Band 2: QPSK & RB Size 1
BW: 20MHz
Lowest channel



Date: 24.OCT.2019 15:03:43

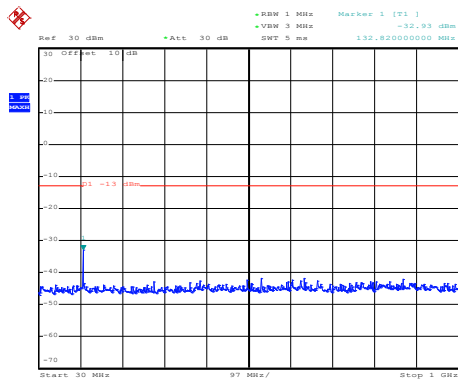
30MHz~1GHz



Date: 24.OCT.2019 15:03:22

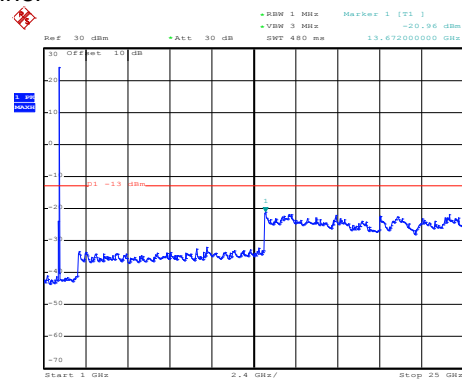
1GHz~25GHz

Middle channel



Date: 24.OCT.2019 15:03:54

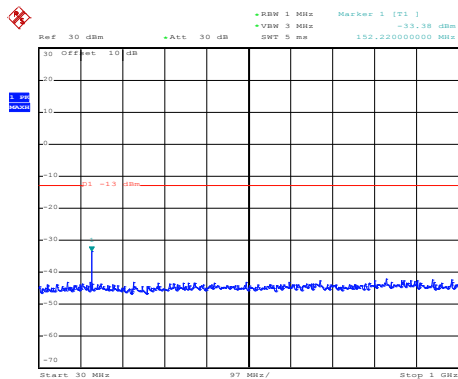
30MHz~1GHz



Date: 24.OCT.2019 15:03:04

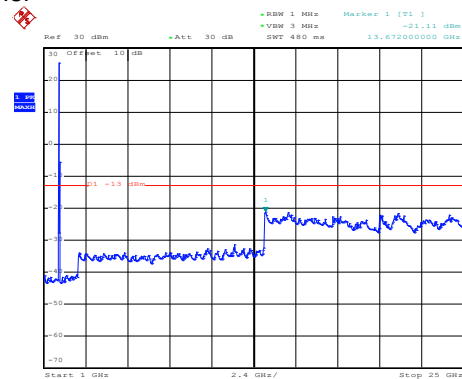
1GHz~25GHz

High channel



Date: 24.OCT.2019 15:04:06

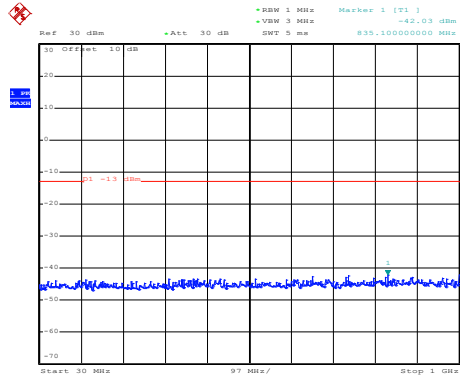
30MHz~1GHz



Date: 24.OCT.2019 15:02:47

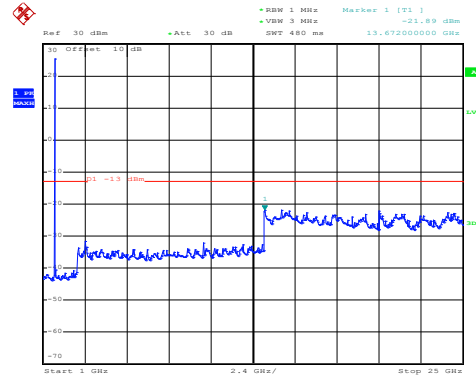
1GHz~25GHz

LTE Band 4 part:

LTE Band 4: 16 QAM & RB Size 1
BW: 1.4MHz
Lowest channel

Date: 24.OCT.2019 14:57:47

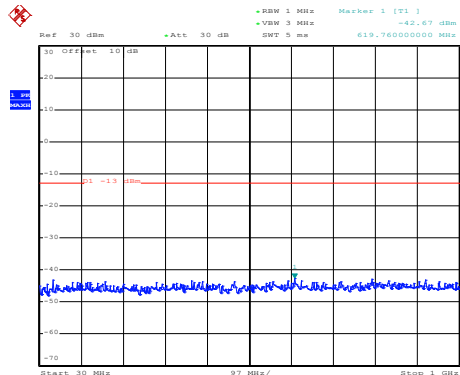
30MHz~1GHz



Date: 24.OCT.2019 15:01:17

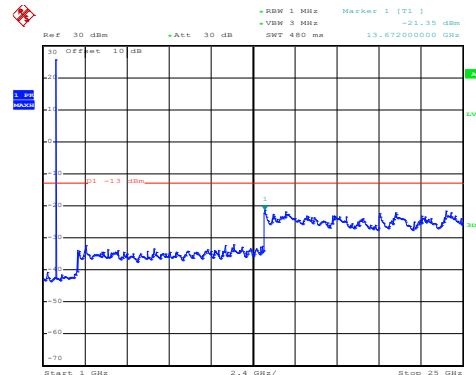
1GHz~25GHz

Middle channel



Date: 24.OCT.2019 14:58:01

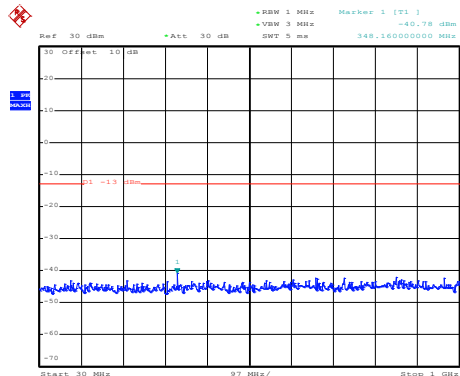
30MHz~1GHz



Date: 24.OCT.2019 15:01:02

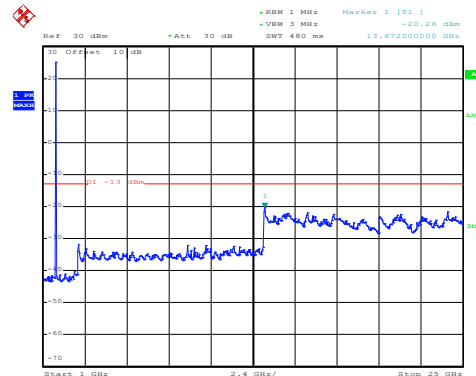
1GHz~25GHz

High channel



Date: 24.OCT.2019 14:58:16

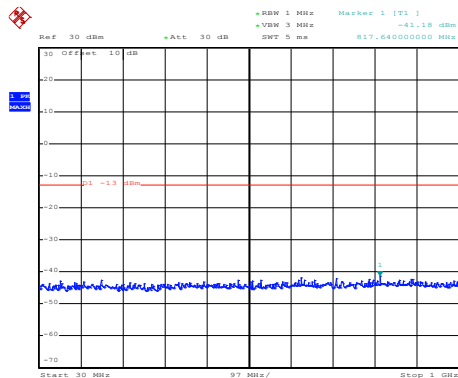
30MHz~1GHz



Date: 24.OCT.2019 15:00:43

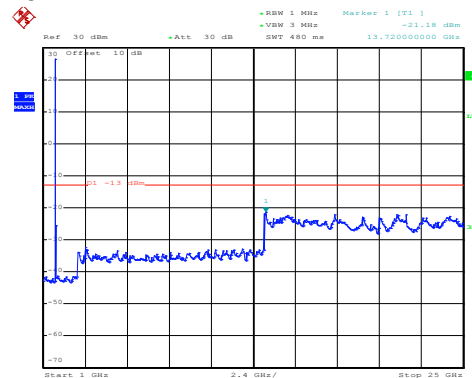
1GHz~25GHz

LTE Band 4: QPSK & RB Size 1
BW: 1.4MHz
Lowest channel



Date: 24.OCT.2019 14:57:43

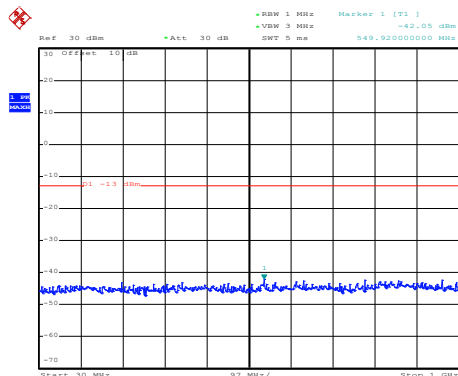
30MHz~1GHz



Date: 24.OCT.2019 15:01:12

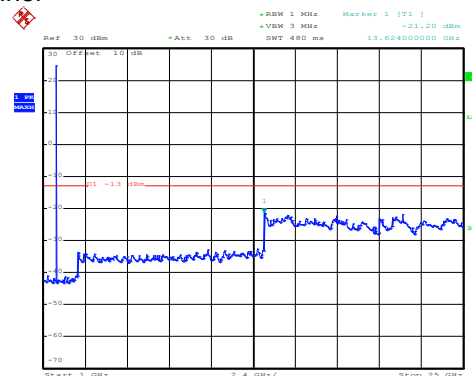
1GHz~25GHz

Middle channel



Date: 24.OCT.2019 14:57:57

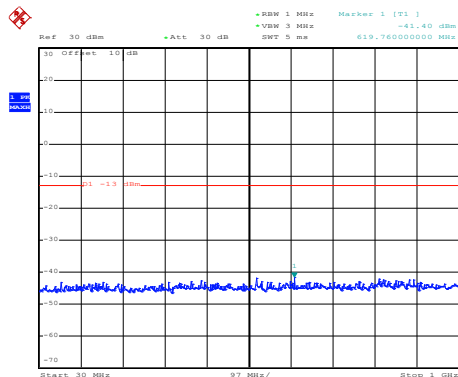
30MHz~1GHz



Date: 24.OCT.2019 15:00:55

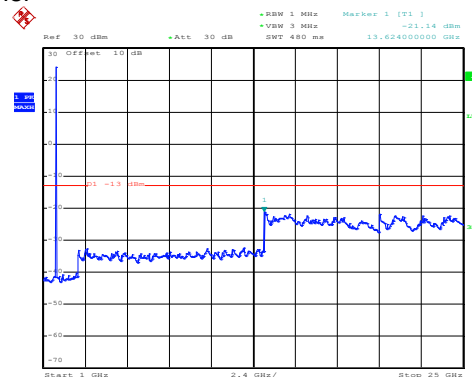
1GHz~25GHz

High channel



Date: 24.OCT.2019 14:58:12

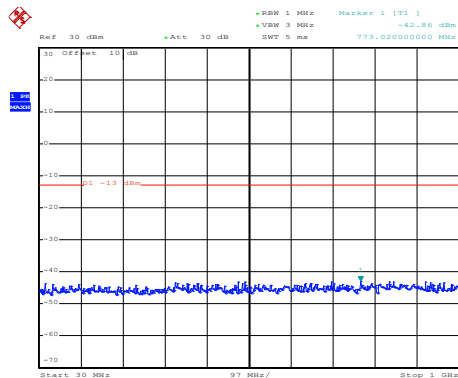
30MHz~1GHz



Date: 24.OCT.2019 15:00:35

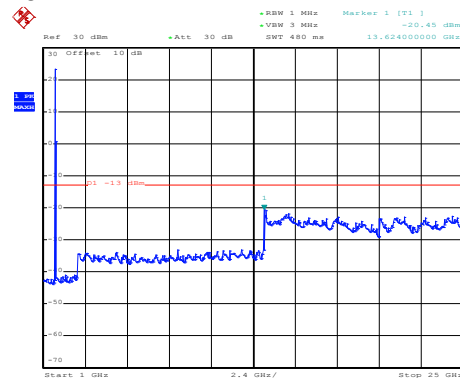
1GHz~25GHz

LTE Band 4: 16 QAM & RB Size 1
BW: 20MHz
Lowest channel



Date: 24.OCT.2019 14:59:08

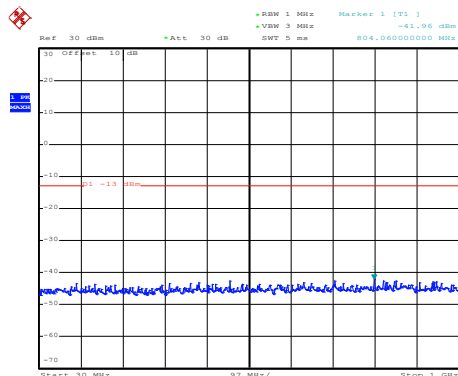
30MHz~1GHz



Date: 24.OCT.2019 14:59:32

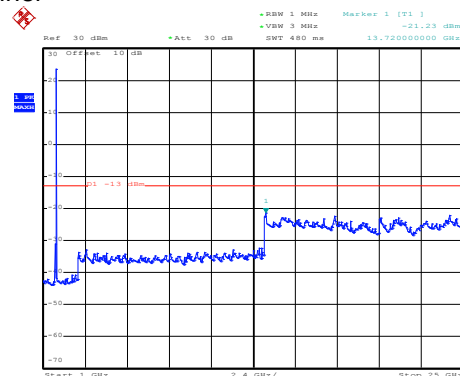
1GHz~25GHz

Middle channel



Date: 24.OCT.2019 14:58:56

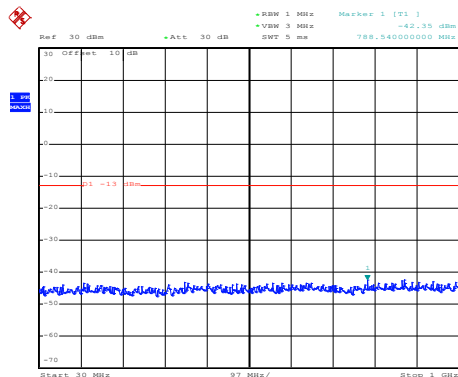
30MHz~1GHz



Date: 24.OCT.2019 14:59:47

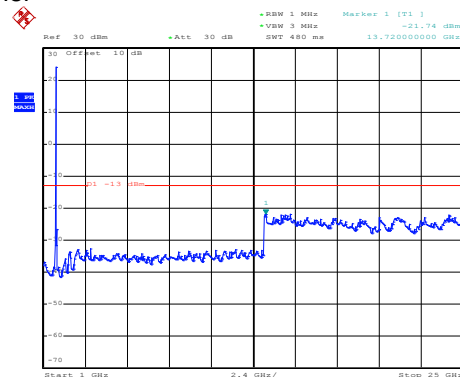
1GHz~25GHz

High channel



Date: 24.OCT.2019 14:58:45

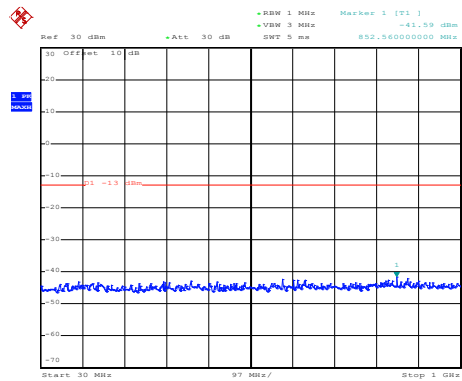
30MHz~1GHz



Date: 24.OCT.2019 15:00:08

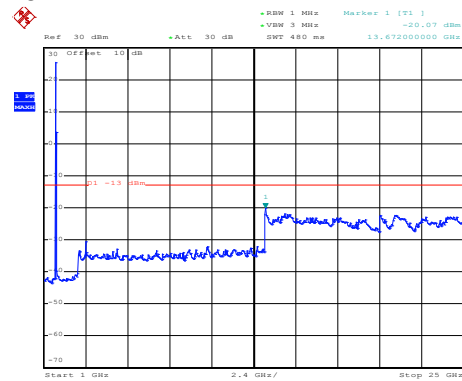
1GHz~25GHz

LTE Band 4: QPSK & RB Size 1
BW: 20MHz
Lowest channel



Date: 24.OCT.2019 14:59:03

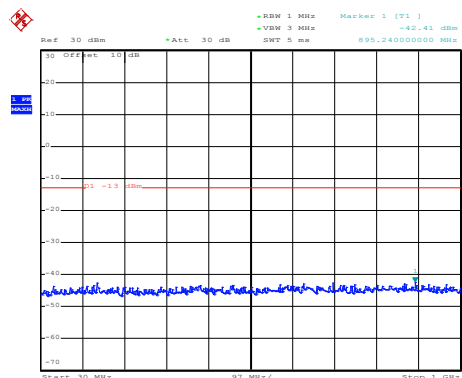
30MHz~1GHz



Date: 24.OCT.2019 14:59:25

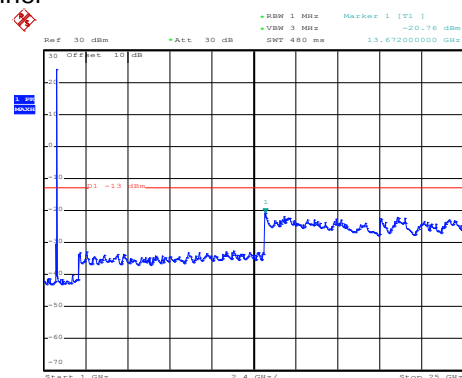
1GHz~25GHz

Middle channel



Date: 24.OCT.2019 14:58:52

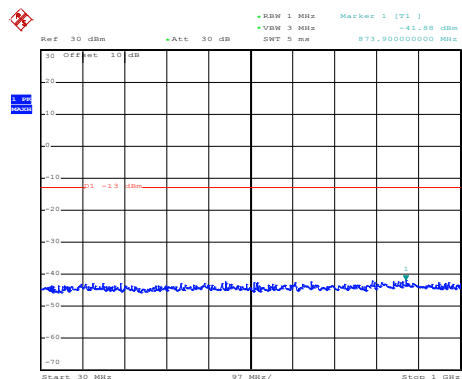
30MHz~1GHz



Date: 24.OCT.2019 14:59:42

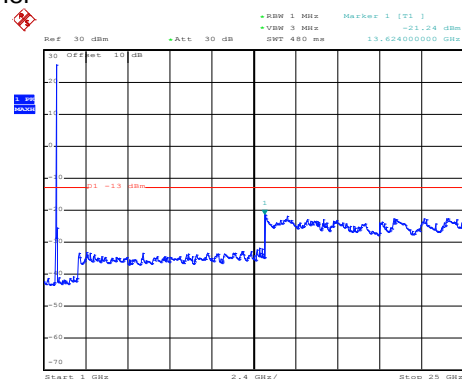
1GHz~25GHz

High channel



Date: 24.OCT.2019 14:58:39

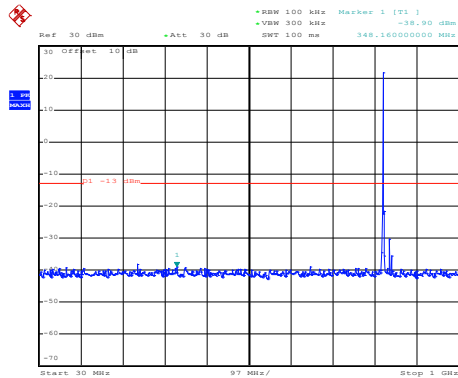
30MHz~1GHz



Date: 24.OCT.2019 15:00:01

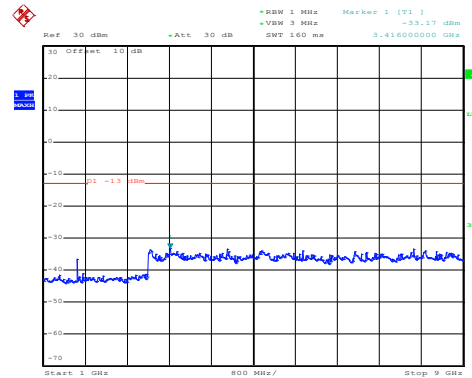
1GHz~25GHz

LTE Band 5 part:

LTE Band 5: 16 QAM & RB Size 1
BW: 1.4MHz
Lowest channel

Date: 24.OCT.2019 14:56:31

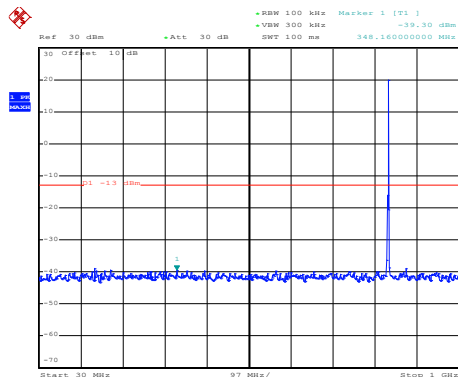
30MHz~1GHz



Date: 24.OCT.2019 14:52:48

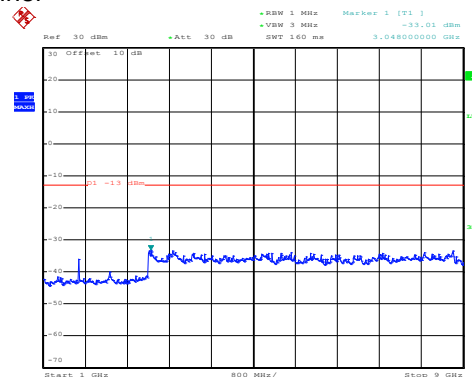
1GHz~9GHz

Middle channel



Date: 24.OCT.2019 14:56:52

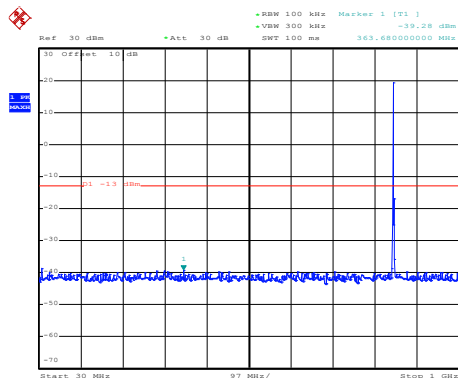
30MHz~1GHz



Date: 24.OCT.2019 14:53:06

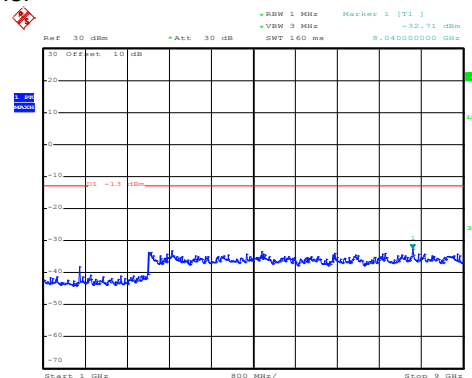
1GHz~9GHz

High channel



Date: 24.OCT.2019 14:57:09

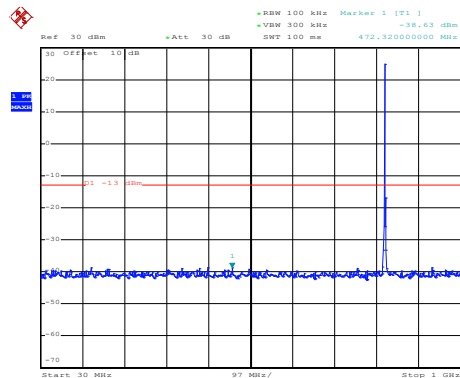
30MHz~1GHz



Date: 24.OCT.2019 14:53:41

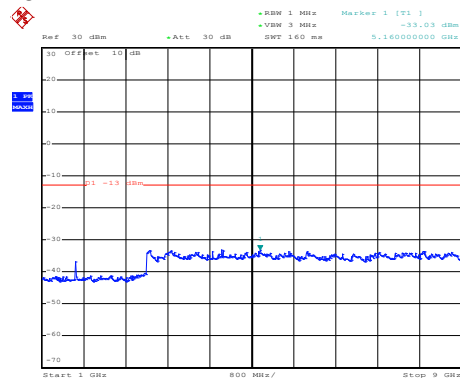
1GHz~9GHz

LTE Band 5: QPSK & RB Size 1
BW: 1.4MHz
Lowest channel



Date: 24.OCT.2019 14:56:21

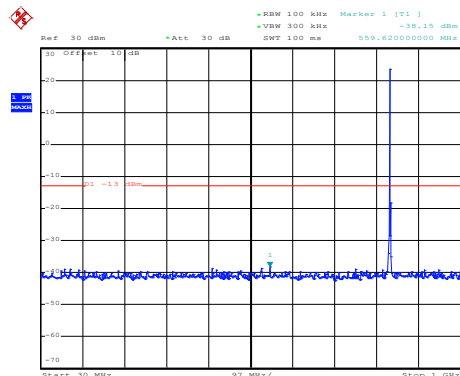
30MHz~1GHz



Date: 24.OCT.2019 14:52:43

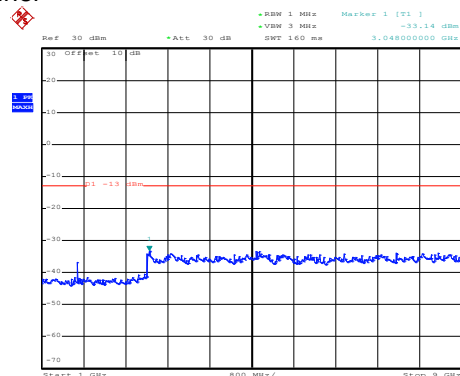
1GHz~9GHz

Middle channel



Date: 24.OCT.2019 14:56:45

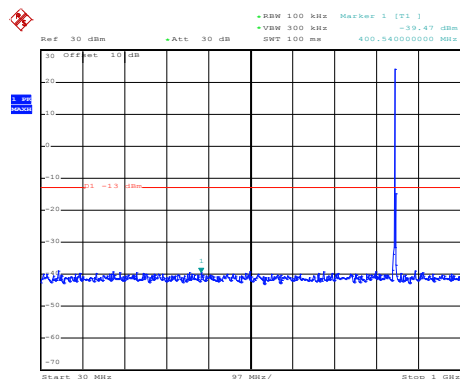
30MHz~1GHz



Date: 24.OCT.2019 14:52:59

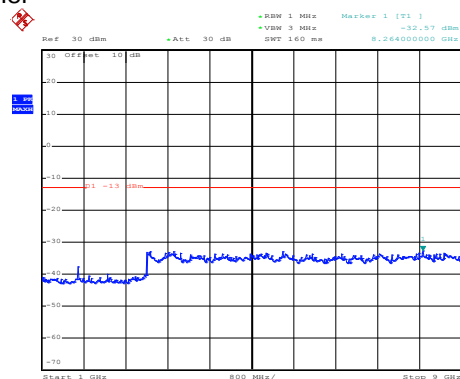
1GHz~9GHz

High channel



Date: 24.OCT.2019 14:57:03

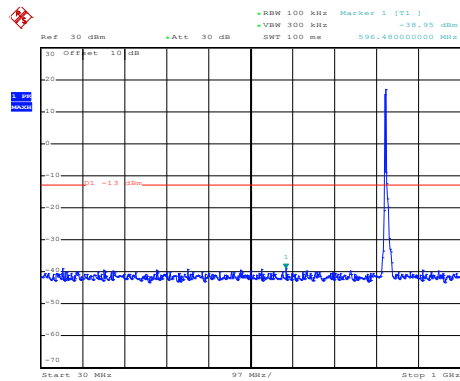
30MHz~1GHz



Date: 24.OCT.2019 14:53:36

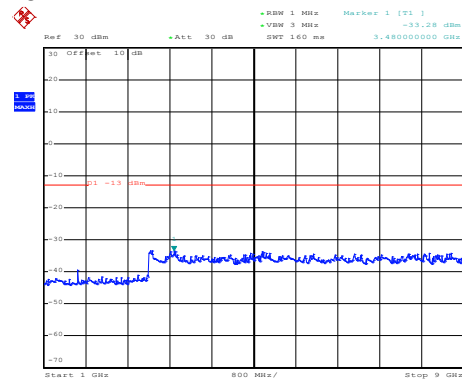
1GHz~9GHz

LTE Band 5: 16 QAM & RB Size 1 BW: 10MHz Lowest channel



Date: 24.OCT.2019 14:55:57

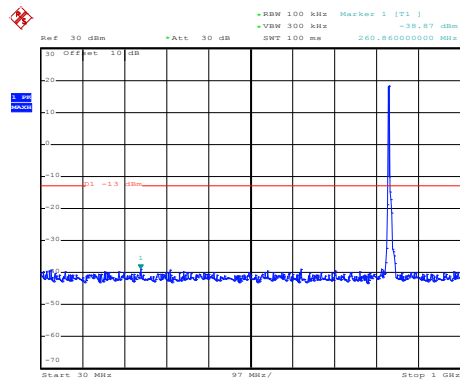
30MHz~1GHz



Date: 24.OCT.2019 14:54:14

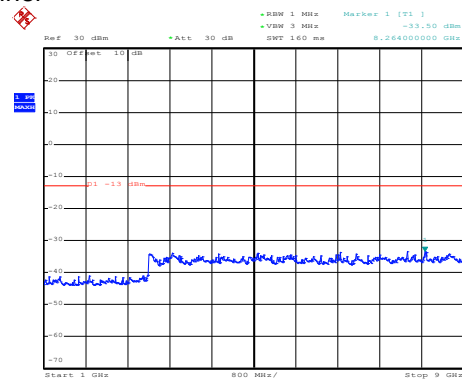
1GHz~9GHz

Middle channel



Date: 24.OCT.2019 14:55:35

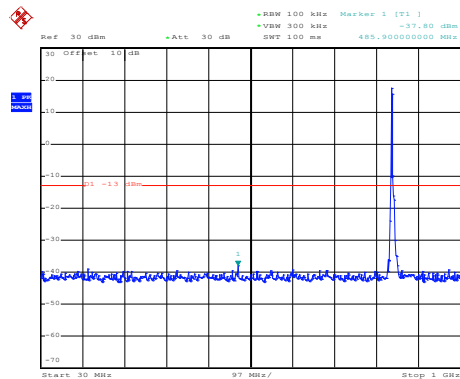
30MHz~1GHz



Date: 24.OCT.2019 14:54:28

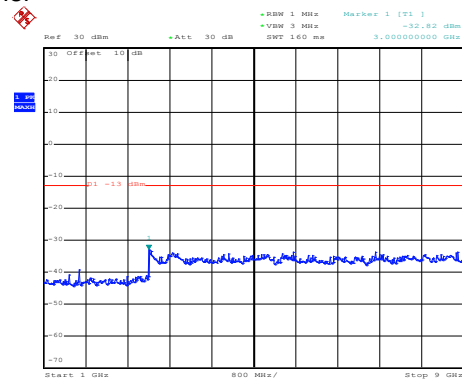
1GHz~9GHz

High channel



Date: 24.OCT.2019 14:55:20

30MHz~1GHz



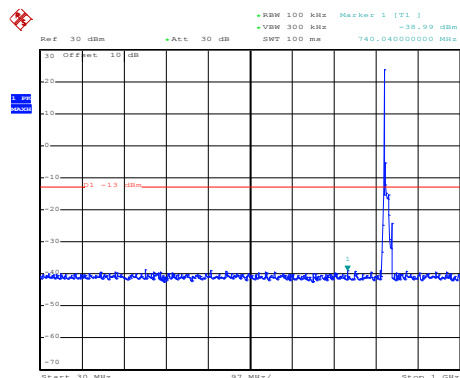
Date: 24.OCT.2019 14:54:42

1GHz~9GHz

LTE Band 5: QPSK & RB Size 1

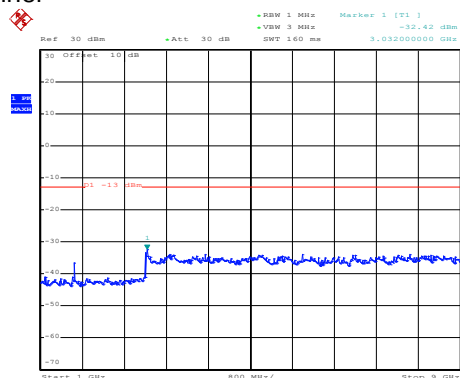
BW: 10MHz

Lowest channel



Date: 24.OCT.2019 14:55:51

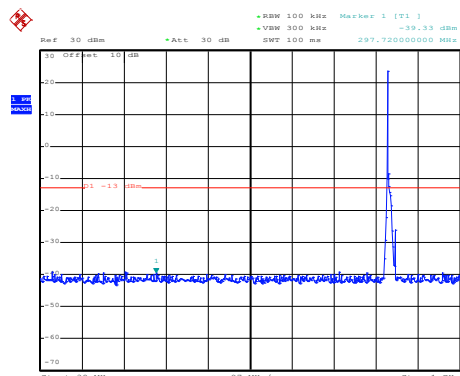
30MHz~1GHz



Date: 24.OCT.2019 14:54:09

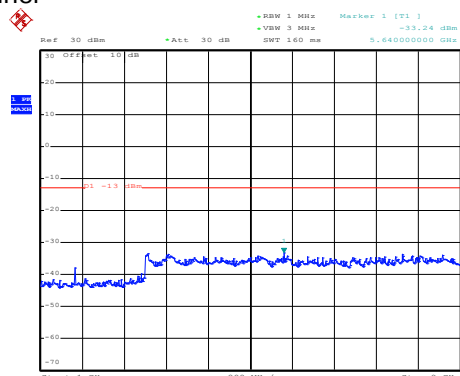
1GHz~9GHz

Middle channel



Date: 24.OCT.2019 14:55:30

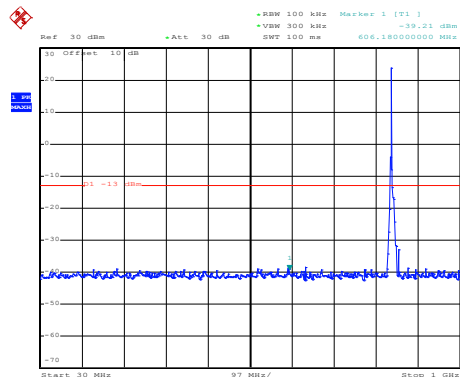
30MHz~1GHz



Date: 24.OCT.2019 14:54:23

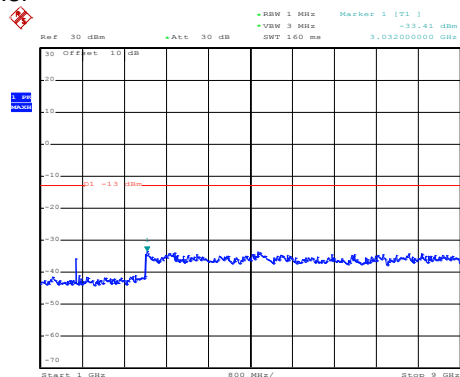
1GHz~9GHz

High channel



Date: 24.OCT.2019 14:55:14

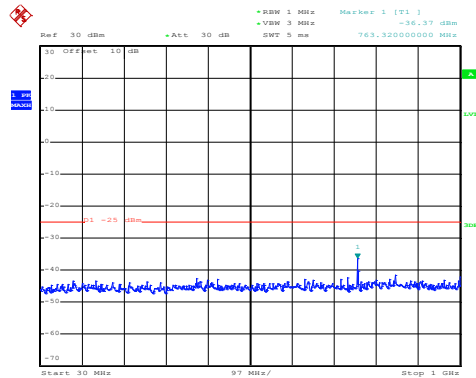
30MHz~1GHz



Date: 24.OCT.2019 14:54:37

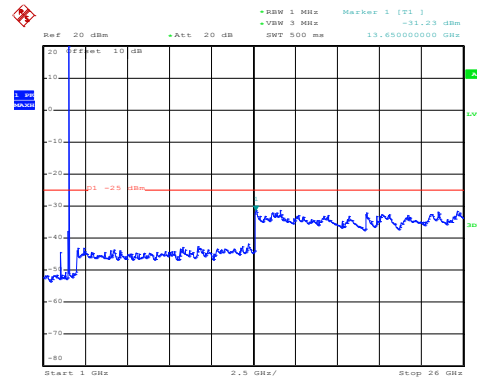
1GHz~9GHz

LTE Band 7 part:

LTE Band 7: 16 QAM & RB Size 1
BW: 5MHz
Lowest channel

Date: 24.OCT.2019 14:48:08

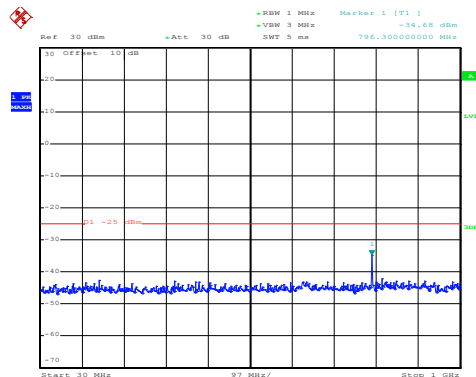
30MHz~1GHz



Date: 24.OCT.2019 14:50:20

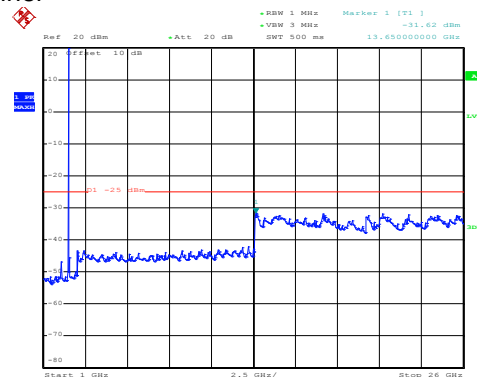
1GHz~25GHz

Middle channel



Date: 24.OCT.2019 14:48:23

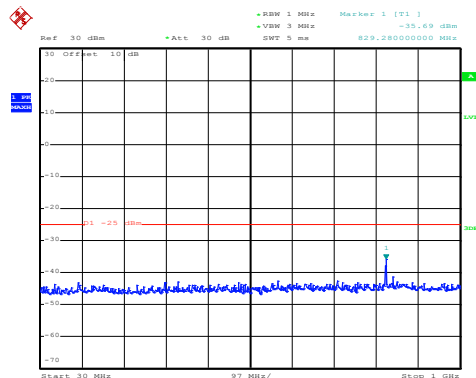
30MHz~1GHz



Date: 24.OCT.2019 14:49:57

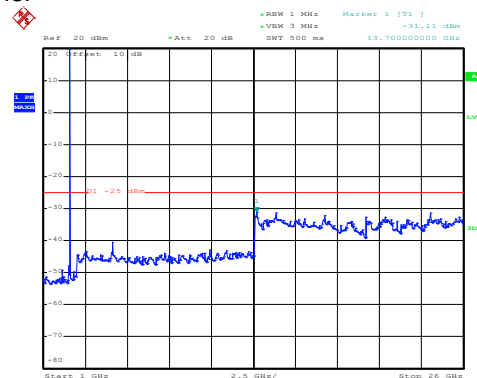
1GHz~25GHz

High channel



Date: 24.OCT.2019 14:48:47

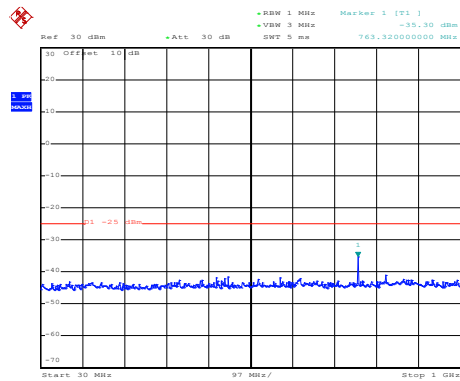
30MHz~1GHz



Date: 24.OCT.2019 14:49:38

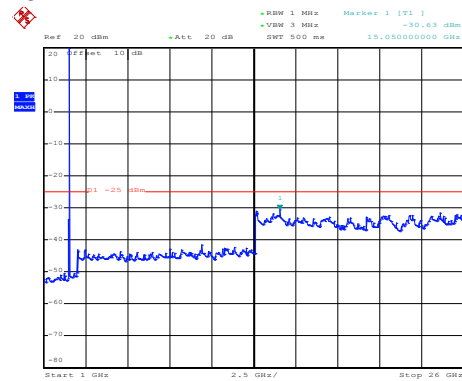
1GHz~25GHz

LTE Band 7: QPSK & RB Size 1
BW: 5MHz
Lowest channel



Date: 24.OCT.2019 14:48:04

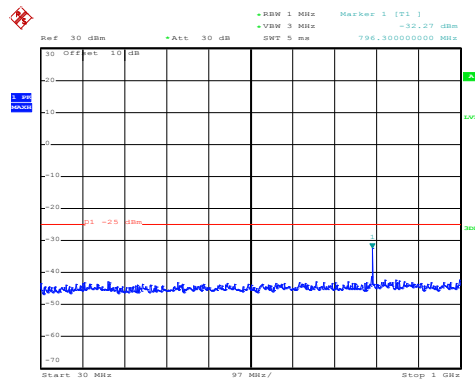
30MHz~1GHz



Date: 24.OCT.2019 14:50:09

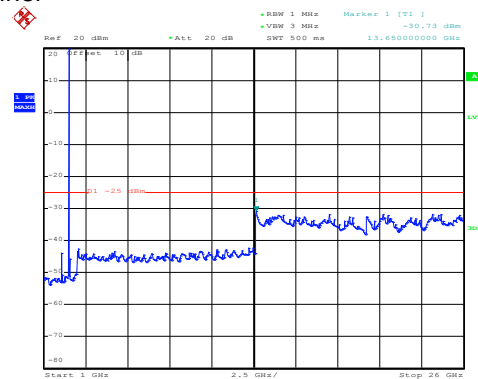
1GHz~25GHz

Middle channel



Date: 24.OCT.2019 14:48:18

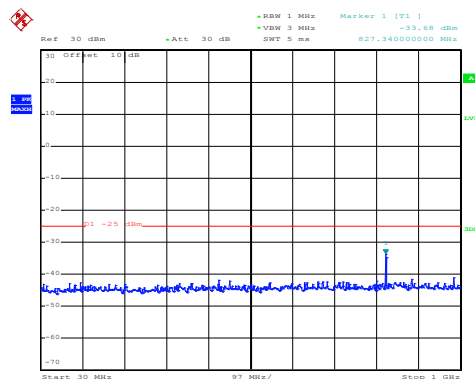
30MHz~1GHz



Date: 24.OCT.2019 14:49:50

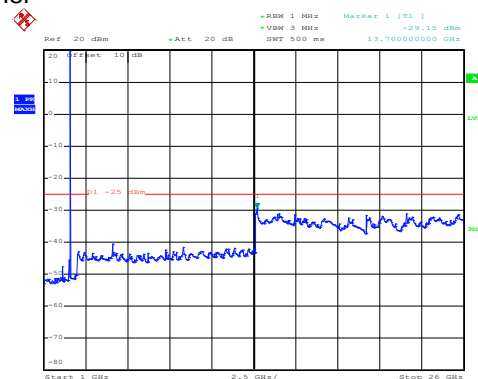
1GHz~25GHz

High channel



Date: 24.OCT.2019 14:48:43

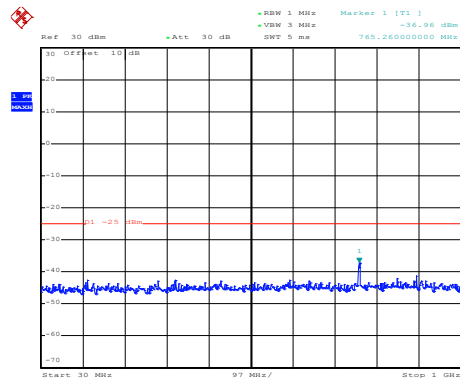
30MHz~1GHz



Date: 24.OCT.2019 14:49:33

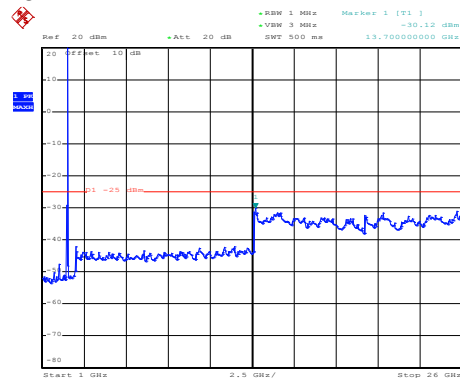
1GHz~25GHz

LTE Band 7: 16 QAM & RB Size 1
BW: 20MHz
Lowest channel



Date: 24.OCT.2019 14:47:10

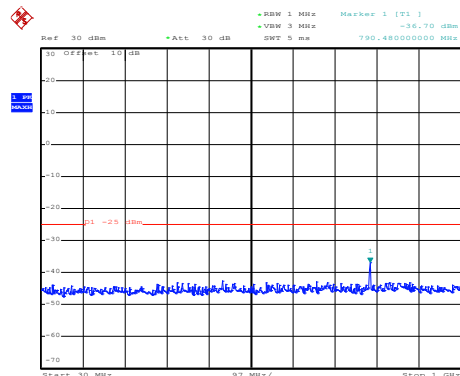
30MHz~1GHz



Date: 24.OCT.2019 14:50:58

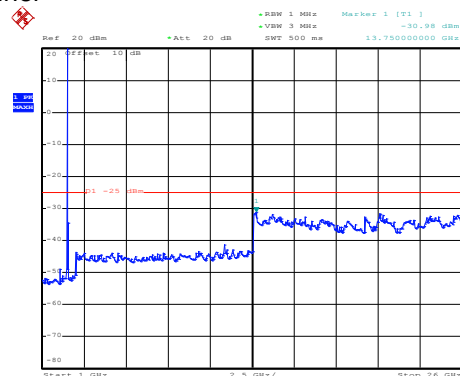
1GHz~25GHz

Middle channel



Date: 24.OCT.2019 14:47:26

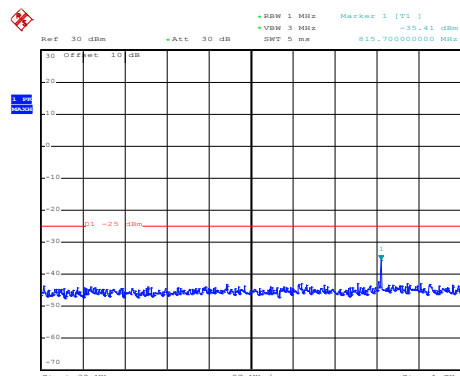
30MHz~1GHz



Date: 24.OCT.2019 14:51:14

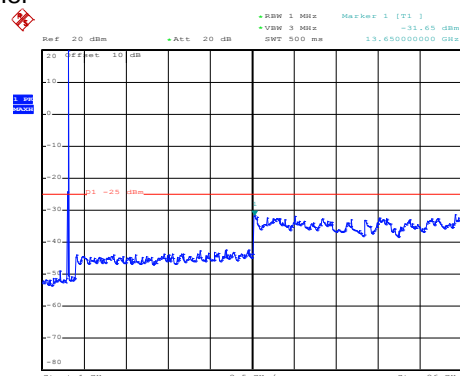
1GHz~25GHz

High channel



Date: 24.OCT.2019 14:47:43

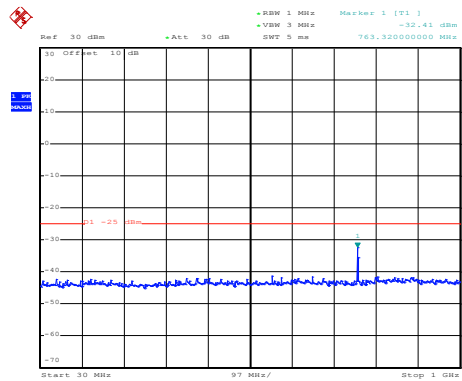
30MHz~1GHz



Date: 24.OCT.2019 14:51:30

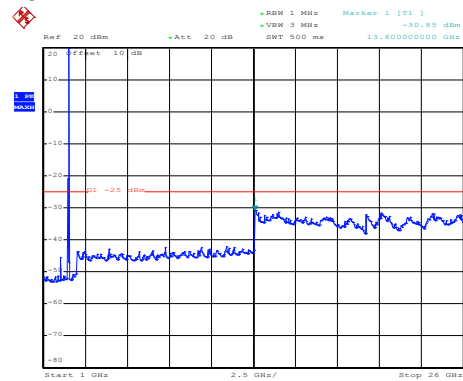
1GHz~25GHz

LTE Band 7: QPSK & RB Size 1
BW: 20MHz
Lowest channel



Date: 24.OCT.2019 14:47:05

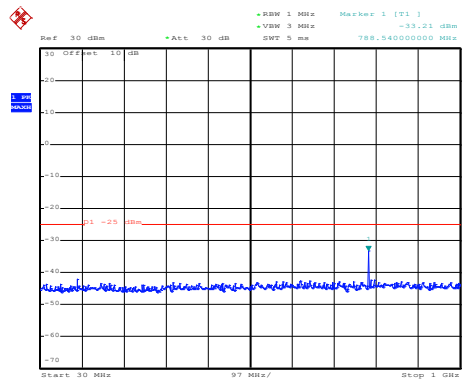
30MHz~1GHz



Date: 24.OCT.2019 14:50:46

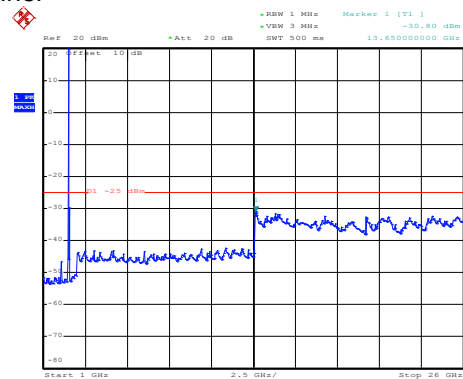
1GHz~25GHz

Middle channel



Date: 24.OCT.2019 14:47:22

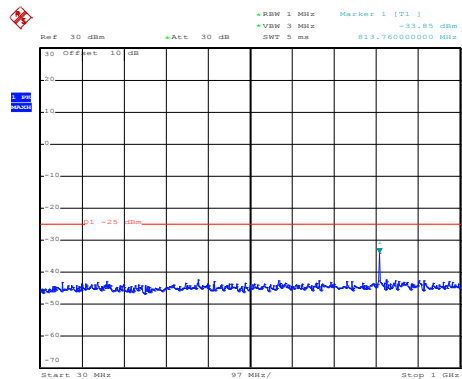
30MHz~1GHz



Date: 24.OCT.2019 14:51:07

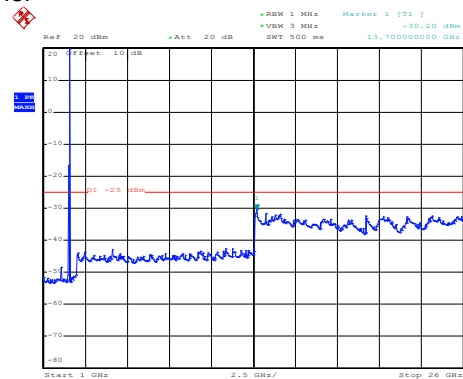
1GHz~25GHz

High channel



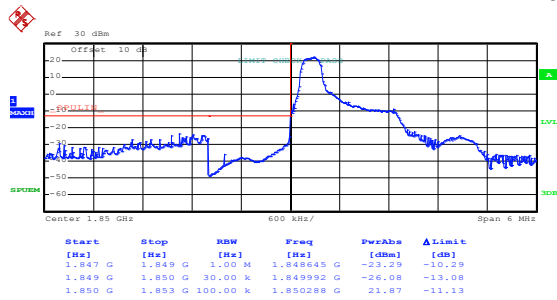
Date: 24.OCT.2019 14:47:39

30MHz~1GHz



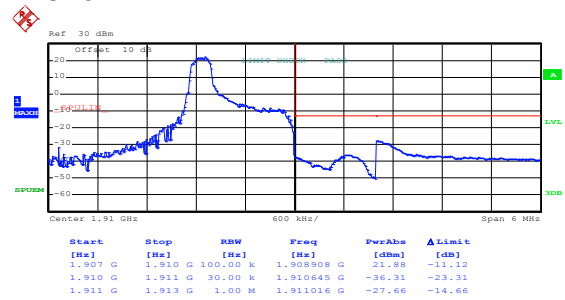
Date: 24.OCT.2019 14:51:24

1GHz~25GHz

Band edge emission:**LTE Band 2 part:****LTE Band 2, BW: 1.4MHz
16QAM & RB Size 1**

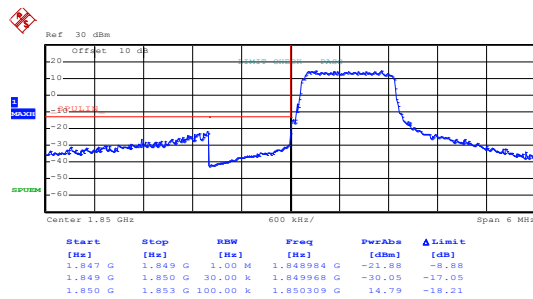
Date: 24.OCT.2019 09:52:54

Lowest channel



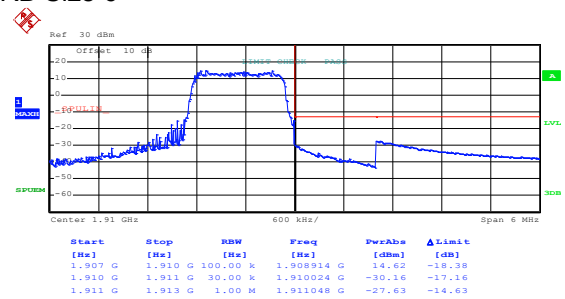
Date: 24.OCT.2019 09:53:54

Highest channel

16QAM & RB Size 6

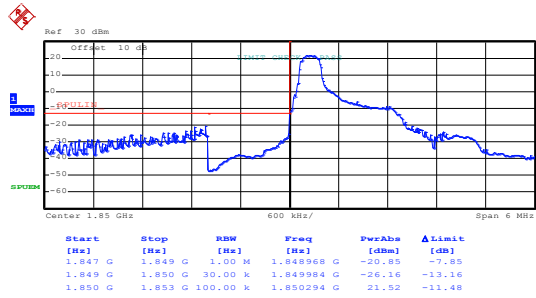
Date: 24.OCT.2019 09:53:08

Lowest channel



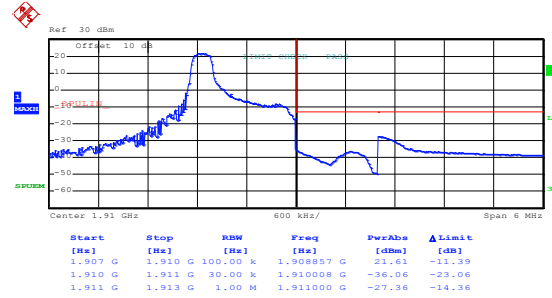
Date: 24.OCT.2019 09:53:29

Highest channel

LTE Band 2, BW: 1.4MHz
QPSK & RB Size 1

Date: 24.OCT.2019 09:52:45

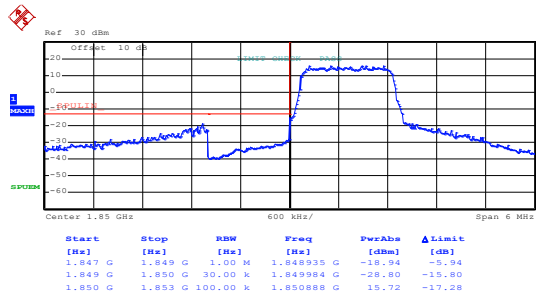
Lowest channel



Date: 24.OCT.2019 09:53:45

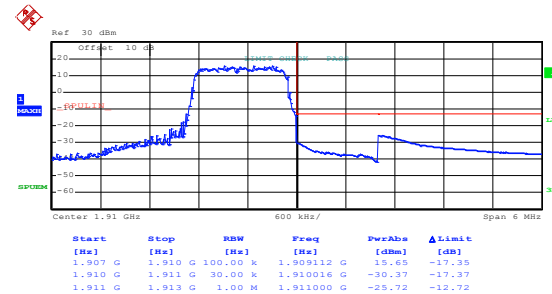
Highest channel

QPSK & RB Size 6



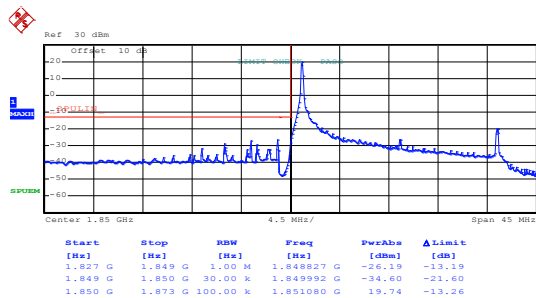
Date: 24.OCT.2019 09:53:01

Lowest channel



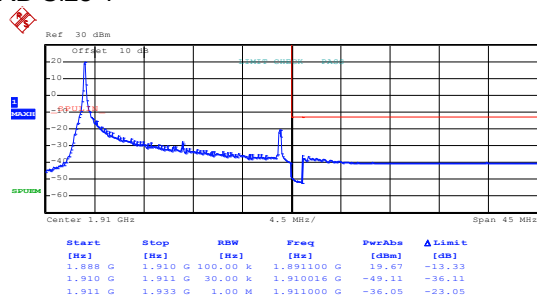
Date: 24.OCT.2019 09:53:23

Highest channel

LTE Band 2, BW: 20MHz
16QAM & RB Size 1

Date: 24.OCT.2019 09:55:37

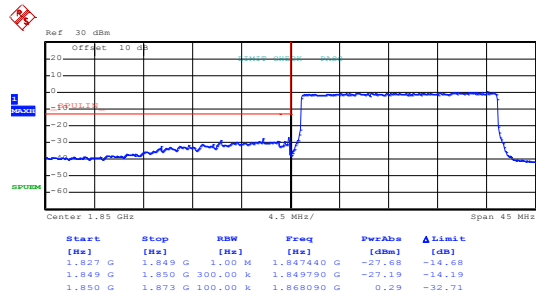
Lowest channel



Date: 24.OCT.2019 09:54:32

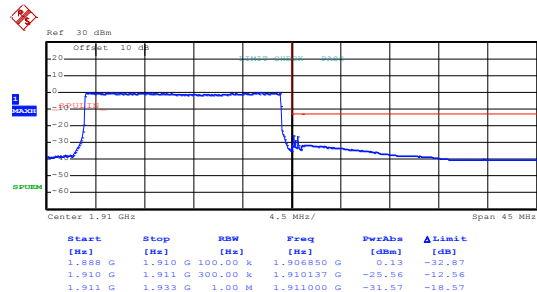
Highest channel

16QAM & RB Size 100



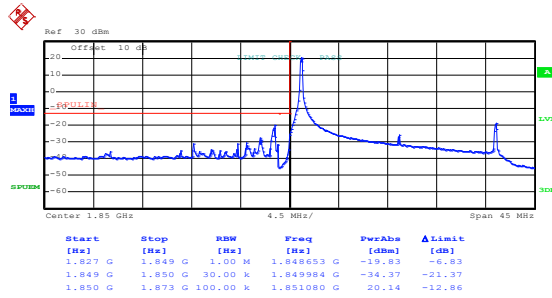
Date: 24.OCT.2019 09:55:17

Lowest channel



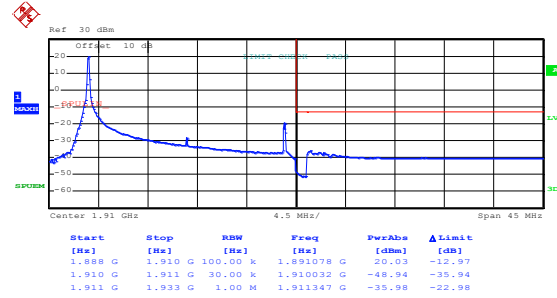
Date: 24.OCT.2019 09:54:50

Highest channel

LTE Band 2, BW: 20MHz
QPSK & RB Size 1

Date: 24.OCT.2019 09:55:30

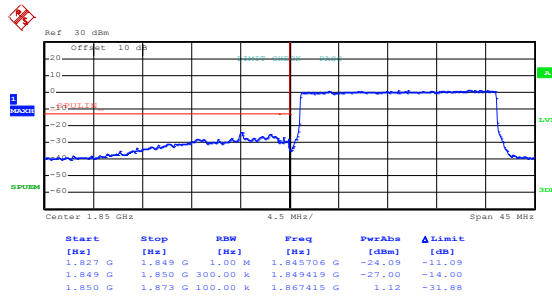
Lowest channel



Date: 24.OCT.2019 09:54:18

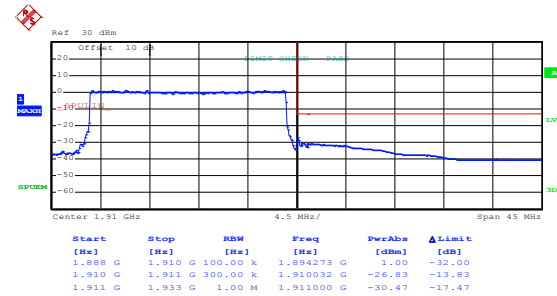
Highest channel

QPSK & RB Size 100



Date: 24.OCT.2019 09:55:13

Lowest channel



Date: 24.OCT.2019 09:54:45

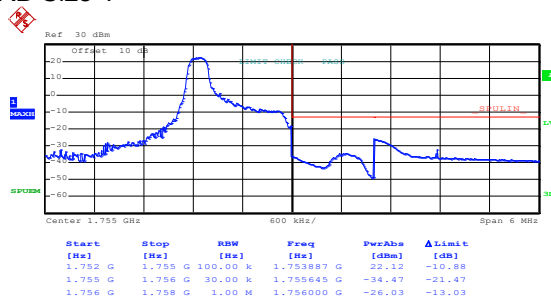
Highest channel

LTE Band 4 part:

LTE Band 4, BW: 1.4MHz
16QAM & RB Size 1

Date: 24.OCT.2019 09:56:49

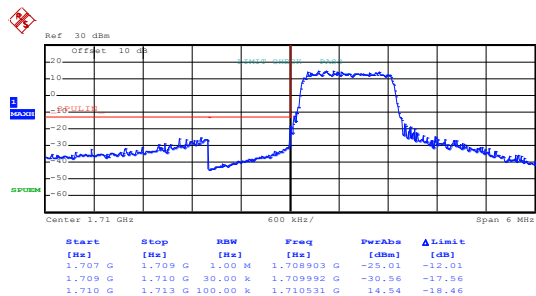
Lowest channel



Date: 24.OCT.2019 09:57:47

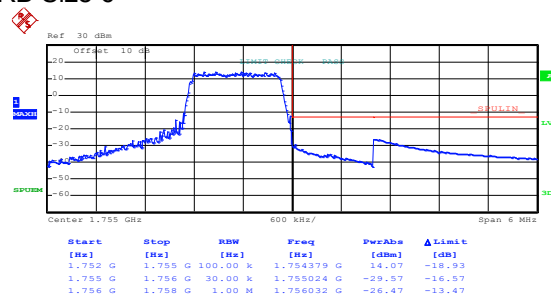
Highest channel

16QAM & RB Size 6



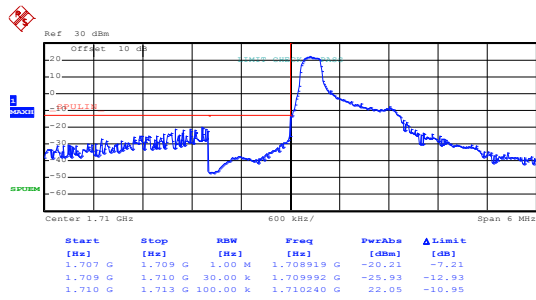
Date: 24.OCT.2019 09:57:03

Lowest channel



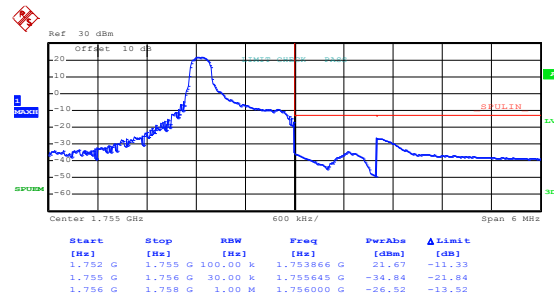
Date: 24.OCT.2019 09:57:22

Highest channel

LTE Band 4, BW: 1.4MHz
QPSK & RB Size 1

Date: 24.OCT.2019 09:56:36

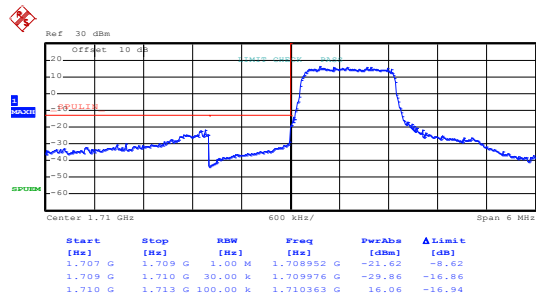
Lowest channel



Date: 24.OCT.2019 09:57:37

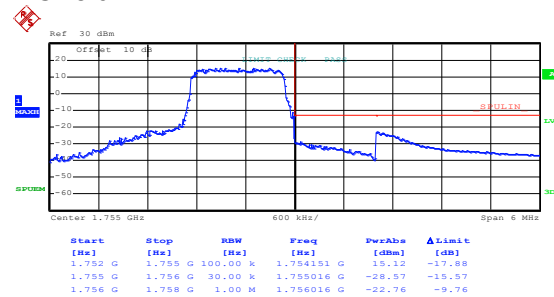
Highest channel

QPSK & RB Size 6



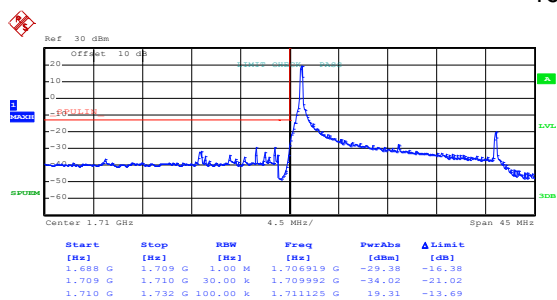
Date: 24.OCT.2019 09:56:58

Lowest channel



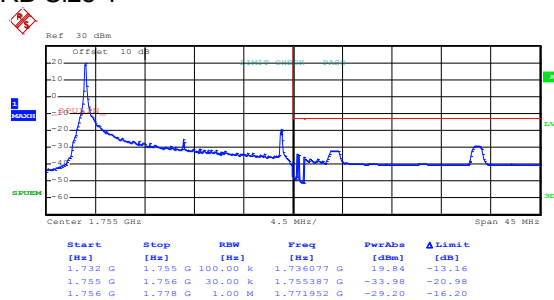
Date: 24.OCT.2019 09:57:18

Highest channel

LTE Band 4, BW: 20MHz
16QAM & RB Size 1

Date: 24.OCT.2019 09:59:40

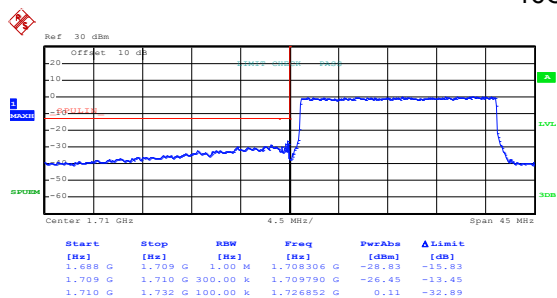
Lowest channel



Date: 24.OCT.2019 09:58:40

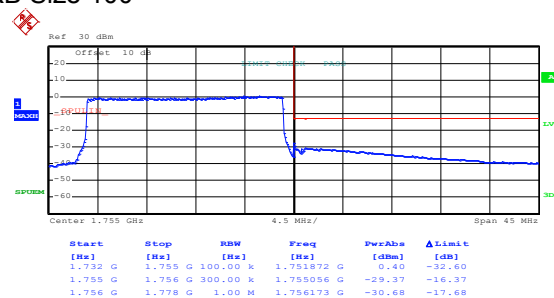
Highest channel

16QAM & RB Size 100



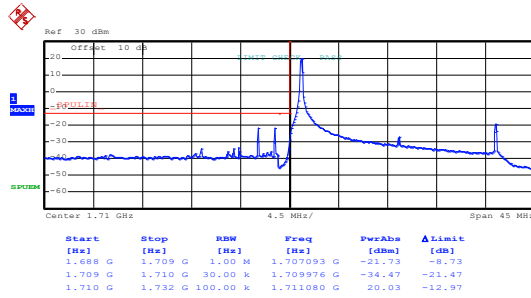
Date: 24.OCT.2019 09:59:23

Lowest channel



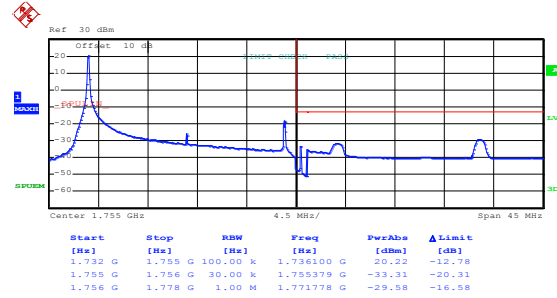
Date: 24.OCT.2019 09:58:57

Highest channel

LTE Band 4, BW: 20MHz
QPSK & RB Size 1

Date: 24.OCT.2019 09:59:34

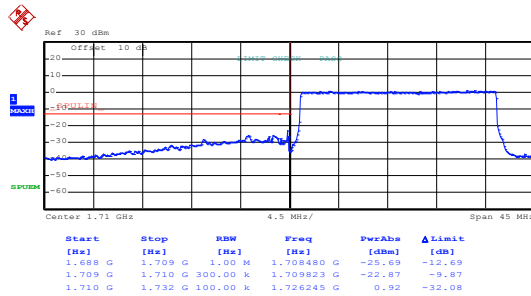
Lowest channel



Date: 24.OCT.2019 09:58:26

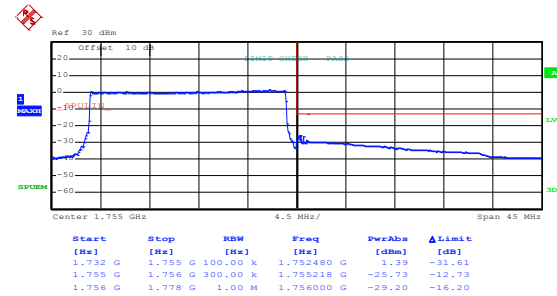
Highest channel

QPSK & RB Size 100



Date: 24.OCT.2019 09:59:19

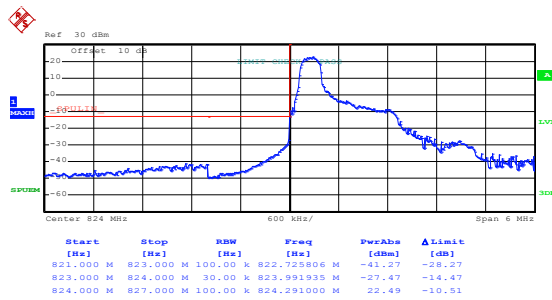
Lowest channel



Date: 24.OCT.2019 09:58:52

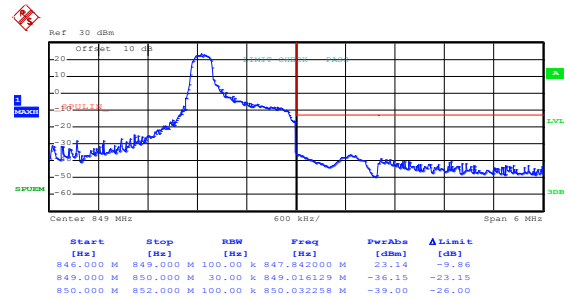
Highest channel

LTE Band 5 part:

LTE Band 5, BW: 1.4MHz
16QAM & RB Size 1

Date: 24.OCT.2019 10:01:24

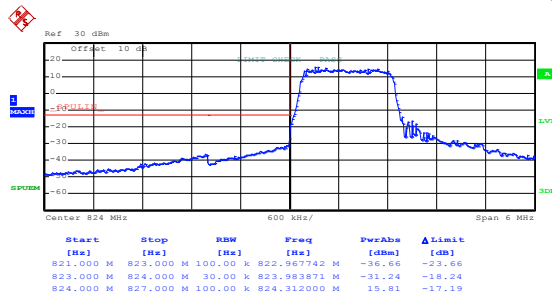
Lowest channel



Date: 24.OCT.2019 10:02:30

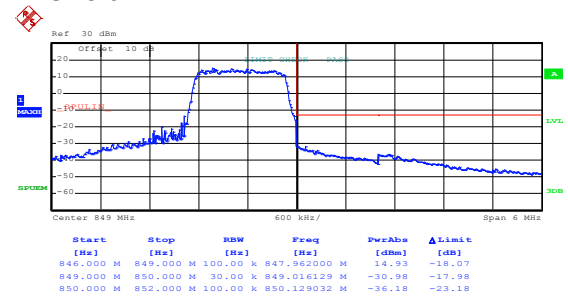
Highest channel

16QAM & RB Size 6



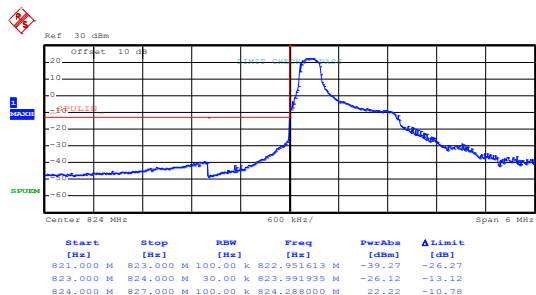
Date: 24.OCT.2019 10:01:38

Lowest channel



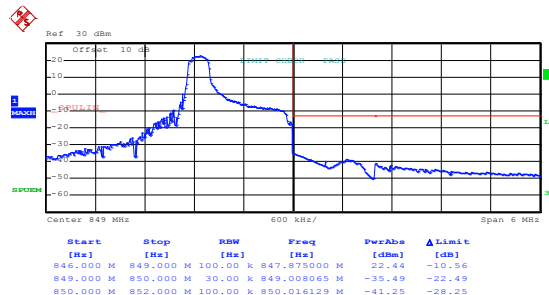
Date: 24.OCT.2019 10:01:58

Highest channel

LTE Band 5, BW: 1.4MHz
QPSK & RB Size 1

Date: 24.OCT.2019 10:01:12

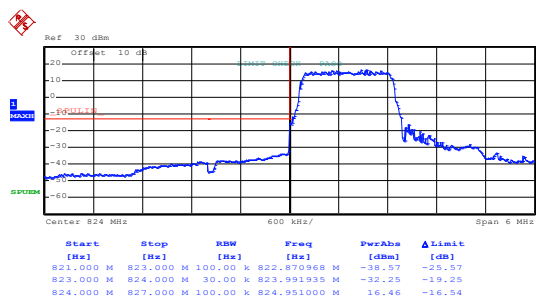
Lowest channel



Date: 24.OCT.2019 10:02:17

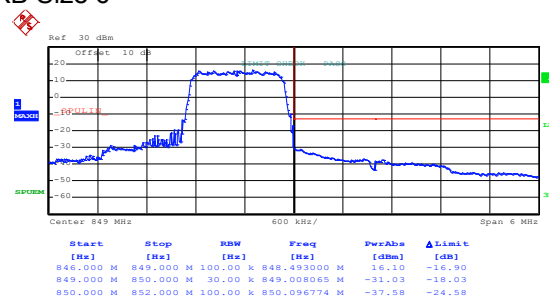
Highest channel

QPSK & RB Size 6



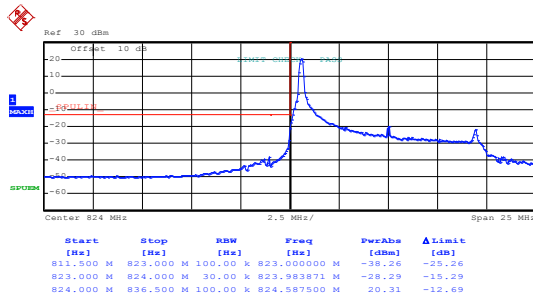
Date: 24.OCT.2019 10:01:31

Lowest channel



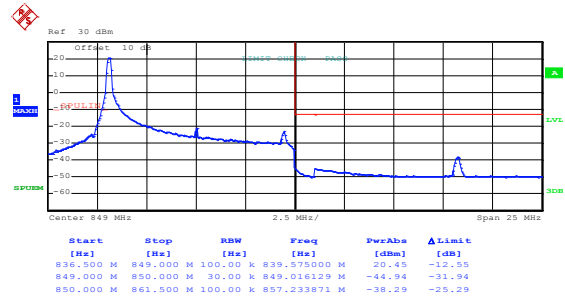
Date: 24.OCT.2019 10:01:53

Highest channel

LTE Band 5, BW: 10MHz
16QAM & RB Size 1

Date: 24.OCT.2019 10:04:47

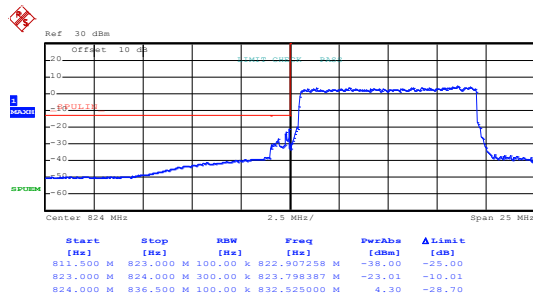
Lowest channel



Date: 24.OCT.2019 10:03:18

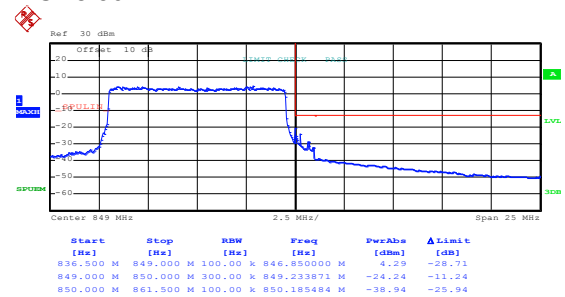
Highest channel

16QAM & RB Size 50



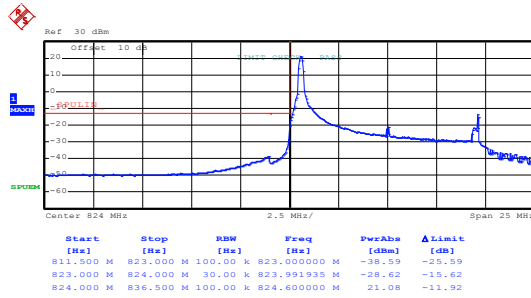
Date: 24.OCT.2019 10:04:24

Lowest channel



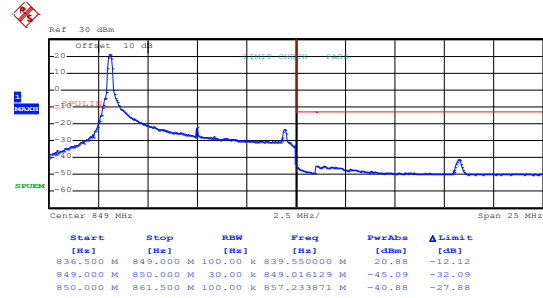
Date: 24.OCT.2019 10:03:52

Highest channel

LTE Band 5, BW: 10MHz
QPSK & RB Size 1

Date: 24.OCT.2019 10:04:40

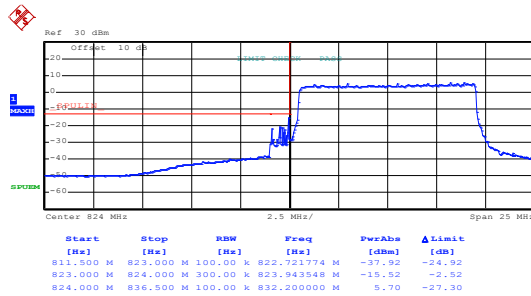
Lowest channel



Date: 24.OCT.2019 10:03:06

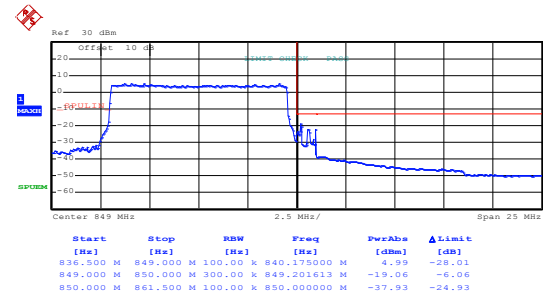
Highest channel

QPSK & RB Size 50



Date: 24.OCT.2019 10:04:19

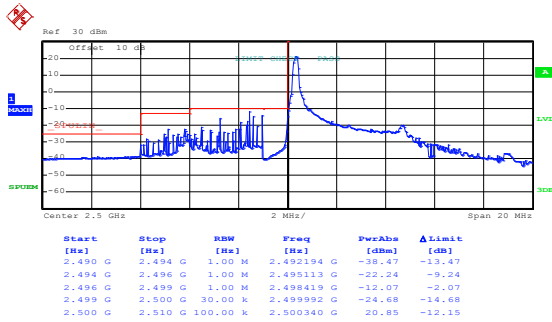
Lowest channel



Date: 24.OCT.2019 10:03:48

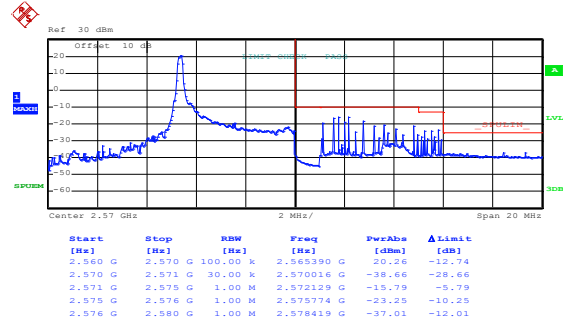
Highest channel

LTE Band 7 part:

LTE Band 7, BW: 5MHz
16QAM & RB Size 1

Date: 24.OCT.2019 10:07:33

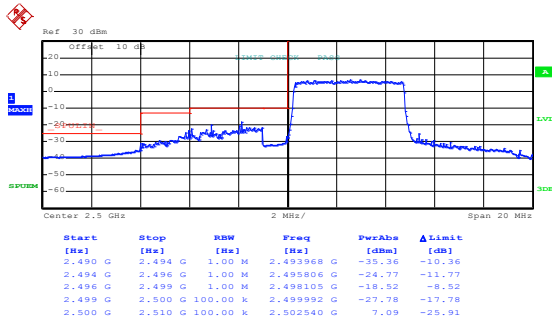
Lowest channel



Date: 24.OCT.2019 10:08:47

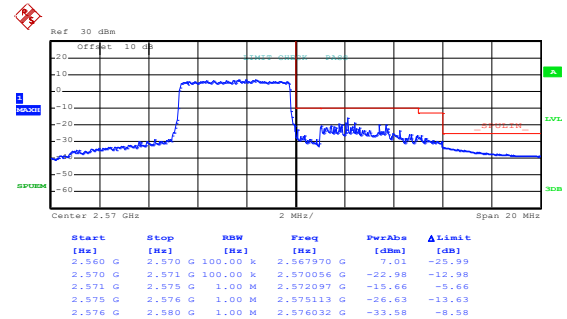
Highest channel

16QAM & RB Size 25



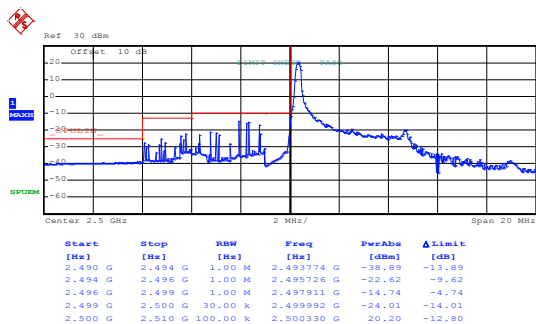
Date: 24.OCT.2019 10:07:52

Lowest channel



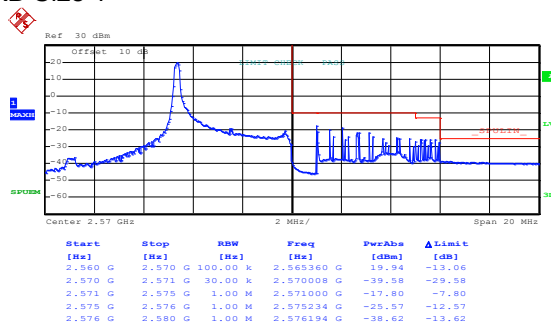
Date: 24.OCT.2019 10:08:26

Highest channel

LTE Band 7, BW: 5MHz
QPSK & RB Size 1

Date: 24.OCT.2019 10:06:48

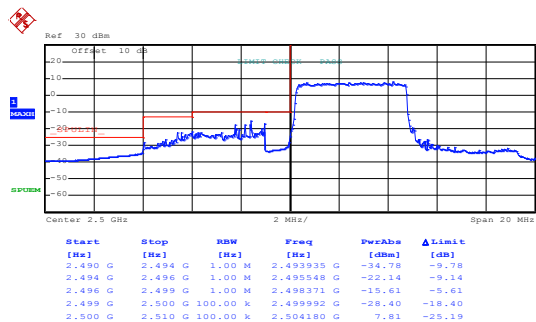
Lowest channel



Date: 24.OCT.2019 10:08:40

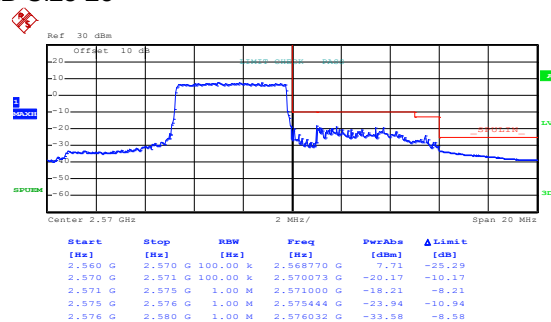
Highest channel

QPSK & RB Size 25



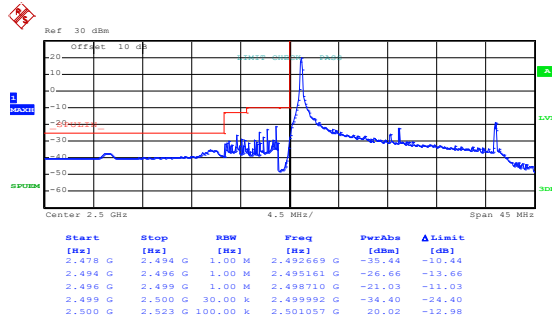
Date: 24.OCT.2019 10:07:47

Lowest channel



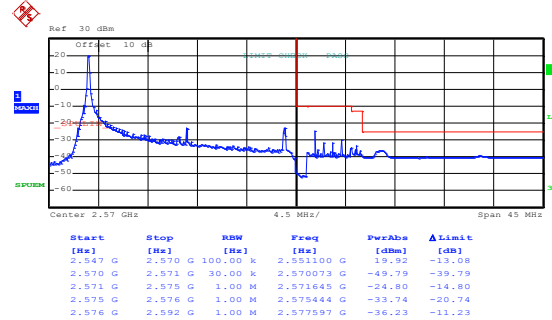
Date: 24.OCT.2019 10:08:22

Highest channel

LTE Band 7, BW: 20MHz
16QAM & RB Size 1

Date: 24.OCT.2019 10:10:30

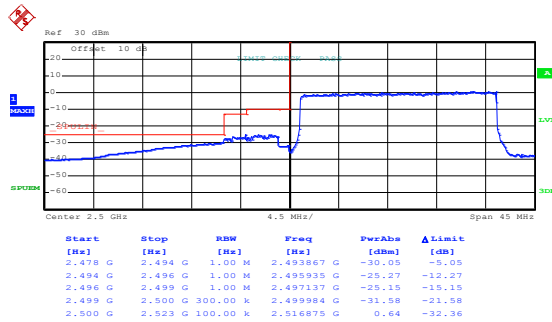
Lowest channel



Date: 24.OCT.2019 10:09:26

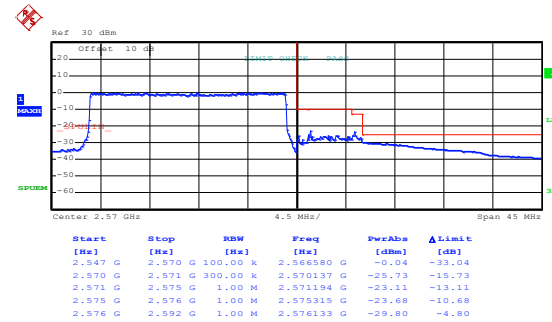
Highest channel

16QAM & RB Size 100



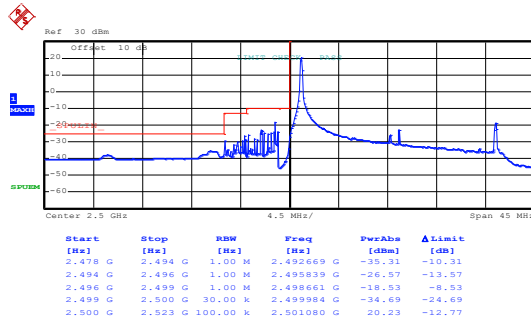
Date: 24.OCT.2019 10:10:11

Lowest channel



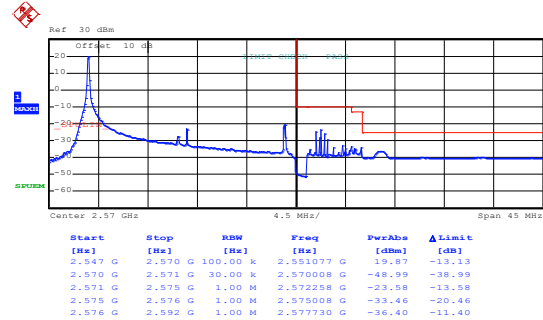
Date: 24.OCT.2019 10:09:45

Highest channel

LTE Band 7, BW: 20MHz
QPSK & RB Size 1

Date: 24.OCT.2019 10:10:23

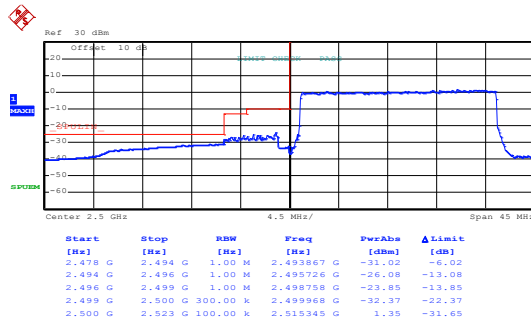
Lowest channel



Date: 24.OCT.2019 10:09:15

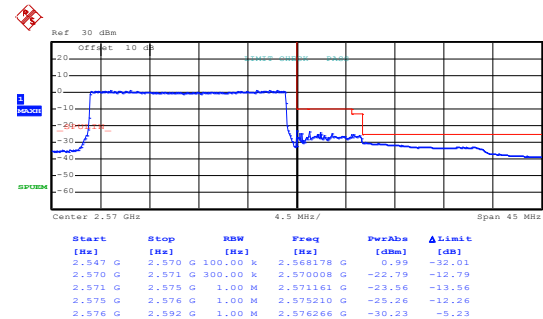
Highest channel

QPSK & RB Size 100



Date: 24.OCT.2019 10:10:06

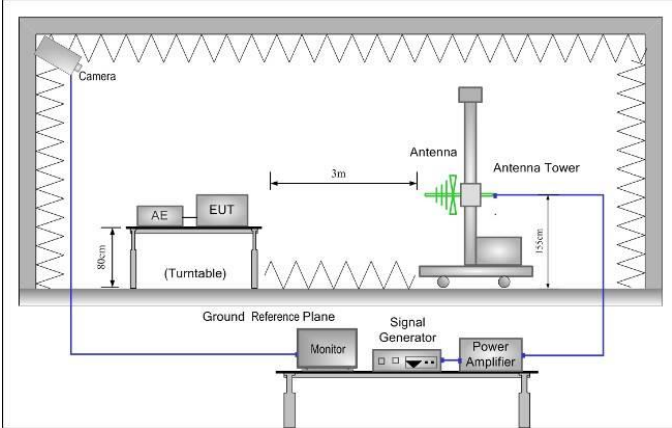
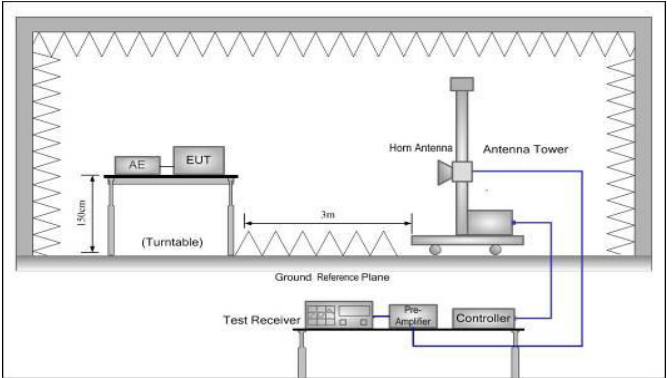
Lowest channel



Date: 24.OCT.2019 10:09:40

Highest channel

6.5 Field strength of spurious radiation measurement

Test Requirement:	Part 22.917(b), Part 24.238 (a), Part 27.53(m), Part 27.53(h)
Limit:	LTE Band 2 & 4 & 5 : The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB (-13 dBm). LTE Band 7: For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz.
Test setup:	Below 1GHz  Above 1GHz 
Test Procedure:	1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. 3. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission

	was determined using the substitution method. 4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency. $\text{ERP / EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain(dB/dBi)} - \text{Cable Loss (dB)}$
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details.
Test results:	Passed

Measurement Data:**LTE Band 2 part:**

LTE Band 2, WB: 1.4MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
3701.40	Vertical	-55.46	-13.00	Pass
5552.10	V	-58.04		
7402.00	V	-58.69		
3701.40	Horizontal	-55.10		
5552.10	H	-58.50		
7402.00	H	-57.47		
Middle Channel				
3760.00	Vertical	-55.62	-13.00	Pass
5640.00	V	-58.11		
7520.00	V	-58.58		
3760.00	Horizontal	-55.21		
5640.00	H	-58.64		
7520.00	H	-57.52		
Highest Channel				
3816.60	Vertical	-55.41	-13.00	Pass
5724.90	V	-58.21		
7633.20	V	-58.52		
3816.60	Horizontal	-55.01		
5724.90	H	-58.41		
7633.20	H	-57.49		
Note: 1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report. 2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 2, WB: 20MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
3720.00	Vertical	-55.23	-13.00	Pass
5580.00	V	-57.98		
7440.00	V	-58.52		
3720.00	Horizontal	-55.02		
5580.00	H	-58.42		
7440.00	H	-57.35		
Middle Channel				
3760.00	Vertical	-55.45	-13.00	Pass
5640.00	V	-58.02		
7520.00	V	-58.45		
3760.00	Horizontal	-54.98		
5640.00	H	-58.54		
7520.00	H	-57.31		
Highest Channel				
3800.00	Vertical	-55.27	-13.00	Pass
5700.00	V	-58.18		
7600.00	V	-58.32		
3800.00	Horizontal	-55.12		
5700.00	H	-58.36		
7600.00	H	-57.28		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 4 part:

LTE Band 4, WB: 1.4MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
3421.40	Vertical	-57.23	-13.00	Pass
5132.10	V	-58.25		
6842.80	V	-58.02		
3421.40	Horizontal	-57.83		
5132.10	H	-58.21		
6842.80	H	-57.99		
Middle Channel				
3465.00	Vertical	-57.31	-13.00	Pass
5197.50	V	-58.36		
6930.00	V	-57.95		
3465.00	Horizontal	-57.94		
5197.50	H	-58.32		
6930.00	H	-57.87		
Highest Channel				
3508.60	Vertical	-57.39	-13.00	Pass
5262.90	V	-58.15		
7017.20	V	-57.86		
3508.60	Horizontal	-57.79		
5262.90	H	-58.18		
7017.20	H	-57.71		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 4, WB: 20MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
3440.00	Vertical	-57.15	-13.00	Pass
5160.00	V	-58.12		
6880.00	V	-57.96		
3440.00	Horizontal	-57.74		
5160.00	H	-58.18		
6880.00	H	-57.75		
Middle Channel				
3465.00	Vertical	-57.08	-13.00	Pass
5197.50	V	-58.21		
6930.00	V	-57.82		
3465.00	Horizontal	-57.69		
5197.50	H	-58.11		
6930.00	H	-57.66		
Highest Channel				
3490.00	Vertical	-57.18	-13.00	Pass
5235.00	V	-58.34		
6980.00	V	-57.83		
3490.00	Horizontal	-57.71		
5235.00	H	-58.26		
6980.00	H	-57.45		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 5 part:

LTE Band 5, WB: 1.4MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
1649.40	Vertical	-59.37	-13.00	Pass
2474.10	V	-54.83		
3298.80	V	-58.66		
1649.40	Horizontal	-61.18		
2474.10	H	-59.96		
3298.80	H	-58.08		
Middle Channel				
1673.00	Vertical	-58.61	-13.00	Pass
2509.50	V	-54.89		
3346.00	V	-58.32		
1673.00	Horizontal	-61.27		
2509.50	H	-59.86		
3346.00	H	-58.43		
Highest Channel				
1696.60	Vertical	-58.74	-13.00	Pass
2544.90	V	-54.93		
3393.20	V	-58.36		
1696.60	Horizontal	-61.49		
2544.90	H	-59.56		
3393.20	H	-67.00		
Note: 1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report. 2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

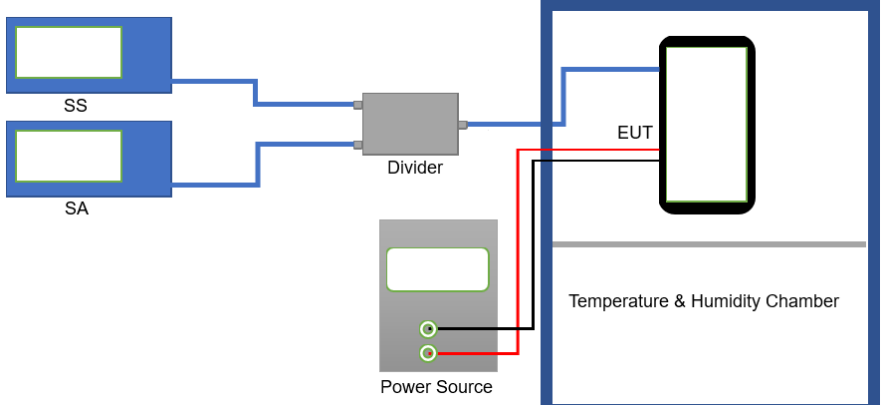
LTE Band 5, WB: 10MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
1658.00	Vertical	-59.83	-13.00	Pass
2487.00	V	-54.61		
3316.00	V	-58.73		
1658.00	Horizontal	-61.73		
2487.00	H	-59.64		
3316.00	H	-58.26		
Middle Channel				
1673.00	Vertical	-58.91	-13.00	Pass
2509.50	V	-54.46		
3346.00	V	-58.34		
1673.00	Horizontal	-61.79		
2509.50	H	-59.83		
3346.00	H	-58.62		
Highest Channel				
1688.00	Vertical	-58.79	-13.00	Pass
2532.00	V	-54.73		
3376.00	V	-58.37		
1688.00	Horizontal	-61.59		
2532.00	H	-59.62		
3376.00	H	-67.93		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 7 part:

LTE Band 7, WB: 5MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
5005.00	Vertical	-58.31	-25.00	Pass
7507.50	V	-58.51		
10010.00	V	-57.56		
5005.00	Horizontal	-57.65		
7507.50	H	-58.22		
10010.00	H	-57.12		
Middle Channel				
5070.00	Vertical	-58.42	-25.00	Pass
7605.00	V	-58.65		
10140.00	V	-57.71		
5070.00	Horizontal	-57.72		
7605.00	H	-58.36		
10140.00	H	-57.24		
Highest Channel				
5135.00	Vertical	-58.24	-25.00	Pass
7702.50	V	-58.45		
10270.00	V	-57.58		
5135.00	Horizontal	-57.52		
7702.50	H	-58.34		
10270.00	H	-57.08		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

LTE Band 7, WB: 20MHz				
RB size 1 & RB offset 0				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest Channel				
5020.00	Vertical	-58.29	-25.00	Pass
7530.00	V	-58.47		
10040.00	V	-57.35		
5020.00	Horizontal	-57.48		
7530.00	H	-58.07		
10040.00	H	-57.15		
Middle Channel				
5070.00	Vertical	-58.18	-25.00	Pass
7605.00	V	-58.36		
10140.00	V	-57.21		
5070.00	Horizontal	-57.32		
7605.00	H	-58.05		
10140.00	H	-57.11		
Highest Channel				
5120.00	Vertical	-58.15	-25.00	Pass
7680.00	V	-58.31		
10240.00	V	-57.42		
5120.00	Horizontal	-57.29		
7680.00	H	-58.08		
10240.00	H	-57.12		
Note:				
1. The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.				
2. For above 1 GHz, all test modes were performed, and just the worst case shown in the report.				

6.6 Frequency stability V.S. Temperature measurement

Test Requirement:	Part 22.355, Part 24.235, Part 27.54, Part 2.1055(a)(1)(b)
Limit:	±2.5ppm For Band 5 Within authorized band for Band 2/4/7
Test setup:	
Test procedure:	1. The equipment under test was connected to an external DC power supply and input rated voltage. 2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. 3. The EUT was placed inside the temperature chamber. 4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. 5. Turn EUT off and set the chamber temperature to –30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. 6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (worst case):

LTE Band 2 part:

Reference Frequency: LTE Band 2 (10MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	175	0.093085	Within authorized band for Band 2	Pass
	-20	165	0.087766		
	-10	148	0.078723		
	0	123	0.065426		
	10	118	0.062766		
	20	159	0.084574		
	30	120	0.063830		
	40	104	0.055319		
	50	168	0.089362		
16QAM					
3.80	-30	182	0.096809	Within authorized band for Band 2	Pass
	-20	116	0.061702		
	-10	125	0.066489		
	0	148	0.078723		
	10	172	0.091489		
	20	113	0.060106		
	30	109	0.057979		
	40	165	0.087766		
	50	138	0.073404		
Note: Only the worst case shown in the report.					

LTE Band 4 part:

Reference Frequency: LTE Band 4 (10MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	165	0.095238	Within authorized band for Band 4	Pass
	-20	148	0.085426		
	-10	123	0.070996		
	0	145	0.083694		
	10	108	0.062338		
	20	111	0.064069		
	30	129	0.074459		
	40	137	0.079076		
	50	149	0.086003		
16QAM					
3.80	-30	196	0.113131	Within authorized band for Band 4	Pass
	-20	188	0.108514		
	-10	164	0.094661		
	0	157	0.090620		
	10	120	0.069264		
	20	118	0.068110		
	30	151	0.087157		
	40	162	0.093506		
	50	143	0.082540		
Note: Only the worst case shown in the report.					

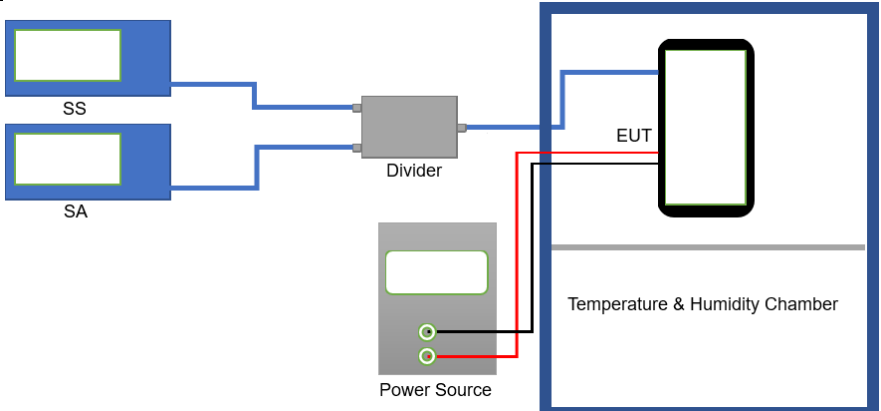
LTE Band 5 part:

Reference Frequency: LTE Band 5 (10MHz) Middle channel=20525 channel=836.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	165	0.197250	±2.5	Pass
	-20	136	0.162582		
	-10	148	0.176928		
	0	152	0.181710		
	10	120	0.143455		
	20	147	0.175732		
	30	169	0.202032		
	40	158	0.188882		
	50	105	0.125523		
16QAM					
3.80	-30	179	0.213987	±2.5	Pass
	-20	158	0.188882		
	-10	144	0.172146		
	0	125	0.149432		
	10	144	0.172146		
	20	102	0.121937		
	30	168	0.200837		
	40	117	0.139868		
	50	150	0.179319		
Note: Only the worst case shown in the report.					

LTE Band 7 part:

Reference Frequency: LTE Band 7 (10MHz) Middle channel=21100 Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
3.80	-30	188	0.074162	Within authorized band for Band 7	Pass
	-20	154	0.060750		
	-10	165	0.065089		
	0	122	0.048126		
	10	134	0.052860		
	20	147	0.057988		
	30	158	0.062327		
	40	149	0.058777		
	50	107	0.042209		
16QAM					
3.80	-30	166	0.065483	Within authorized band for Band 7	Pass
	-20	157	0.061933		
	-10	148	0.058383		
	0	160	0.063116		
	10	109	0.042998		
	20	116	0.045759		
	30	139	0.054832		
	40	128	0.050493		
	50	116	0.045759		
Note: Only the worst case shown in the report.					

6.7 Frequency stability V.S. Voltage measurement

Test Requirement:	Part 22.355, Part 24.235, Part 27.54, Part 2.1055(d)(2)
Limit:	±2.5ppm For Band 5 Within authorized band for Band 2/4/7
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer (SA) and a Signal Source (SS) are connected to a Divider. The output of the Divider is connected to the EUT (Equipment Under Test) inside a Temperature & Humidity Chamber. A Power Source is also connected to the EUT.
Test procedure:	1. Set chamber temperature to 25°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage. 2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. 3. Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (worst case):

LTE Band 2 part:

Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	76	0.040426	Within authorized band for Band 2	Pass
	3.80	54	0.028723		
	3.50	36	0.019149		
16QAM					
25	4.35	90	0.047872	Within authorized band for Band 2	Pass
	3.80	48	0.025532		
	3.50	63	0.033511		
Note: Only the worst case shown in the report.					

LTE Band 4 part:

Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	68	0.039250	Within authorized band for Band 4	Pass
	3.80	54	0.031169		
	3.50	37	0.021356		
16QAM					
25	4.35	97	0.055988	Within authorized band for Band 4	Pass
	3.80	88	0.050794		
	3.50	76	0.043867		
Note: Only the worst case shown in the report.					

LTE Band 5 part:

Reference Frequency: LTE Band 5(10MHz) Middle channel=20525 channel=836.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	66	0.078900	±2.5	Pass
	3.80	57	0.068141		
	3.50	49	0.058577		
16QAM					
25	4.35	84	0.100418	±2.5	Pass
	3.80	65	0.077705		
	3.50	37	0.044232		
Note: Only the worst case shown in the report.					

LTE Band 7 part:

Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
QPSK					
25	4.35	99	0.039053	Within authorized band for Band 7	Pass
	3.80	84	0.033136		
	3.50	63	0.024852		
16QAM					
25	4.35	67	0.026430	Within authorized band for Band 7	Pass
	3.80	46	0.018146		
	3.50	55	0.021696		
Note: Only the worst case shown in the report.					